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THESIS

AN ACCOUNT FOR SAVING ACTIVE PAY
(ASAP):
AN EMPLOYER-SPONSORED SAVINGS PLAN
FOR ACTIVE DUTY MILITARY PERSONNEL

by

Stephen Elliot Honan

December 1990

Thesis Advisor: Richard B. Doyle

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91-14162

91 10 28 001

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SECURITY CLASSIFICATION OF THIS PAGE

REPORT DOCUMENTATION PAGE

Form Approved
OMB No 0704-0188

1a REPORT SECURITY CLASSIFICATION UNCLASSIFIED	1b RESTRICTIVE MARKINGS
2a SECURITY CLASSIFICATION AUTHORITY 2b DECLASSIFICATION / DOWNGRADING SCHEDULE	3 DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release; distribution is unlimited.
4 PERFORMING ORGANIZATION REPORT NUMBER(S)	5 MONITORING ORGANIZATION REPORT NUMBER(S)
6a NAME OF PERFORMING ORGANIZATION Naval Postgraduate School 6b OFFICE SYMBOL (If applicable) 36	7a NAME OF MONITORING ORGANIZATION Naval Postgraduate School
6c ADDRESS (City, State, and ZIP Code) Monterey, California 93940-5000	7b ADDRESS (City, State, and ZIP Code) Monterey, California 93940-5000
8a NAME OF FUNDING / SPONSORING ORGANIZATION 8b OFFICE SYMBOL (If applicable)	9 PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER
8c ADDRESS (City, State, and ZIP Code)	10 SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO / PROJECT NO / TASK NO / WORK UNIT ACCESSION NO

11 TITLE (Include Security Classification)
AN ACCOUNT FOR SAVING ACTIVE PAY (ASAP): AN EMPLOYER-SPONSORED SAVINGS PLAN FOR ACTIVE DUTY MILITARY PERSONNEL

12 PERSONAL AUTHOR(S)
Stephen Elliot Honan

13a TYPE OF REPORT	13b TIME COVERED	14 DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Master's Thesis	FROM ____ TO ____	1990 December	125

16 SUPPLEMENTARY NOTATION
The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense

17 COSATI CODES			18 SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Compensation/Retirement/Retention/Savings/ Pay

19 ABSTRACT (Continue on reverse if necessary and identify by block number)

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20 DISTRIBUTION / AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT ☐ DTIC USERS	21 ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED
22a NAME OF RESPONSIBLE INDIVIDUAL Richard B. Doyle	22b TELEPHONE (Include Area Code) (408) 646-3302 22c OFFICE SYMBOL AS/Dy

DD Form 1473, JUN 86 — Previous editions are obsolete. — SECURITY CLASSIFICATION OF THIS PAGE

S/N 0102-LF-014-6603 — UNCLASSIFIED

BLOCK 19 CONTINUATION:

encourage military personnel to contribute to improvement of the national savings rate.

BLOCK 16 CONTINUATION:
or the U.S. Government.

Accession For
NTIS GRA&I ☑
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Unannounced ☐
Justification
By
Distribution/
Availability Codes

Dist	Avail and/or Special
A-1	

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An Account for Saving Active Pay (ASAP):
An Employer-Sponsored Savings Plan for
Active Duty Military Personnel

by

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Lieutenant Commander, United States Navy
B.S., United States Naval Academy, 1980

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
December 1990

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ABSTRACT

Legislators, recognizing the need to increase the national savings rate, have introduced profit-sharing and thrift savings plans to civilians, but have not included the military. This thesis examines the need for and the costs and benefits of an employer-sponsored savings plan for active duty military personnel. It concludes that it is both feasible and cost-effective to tailor tax-sheltered annuities (TSAs) currently available to nonprofit organizations to the military compensation system. It proposes an account for saving active pay (ASAP) that would permit contributions of one percent of base pay (up to the 20 percent which TSAs allow) per year of military service with the account maturing upon termination of active duty. This program, as envisioned for active duty military personnel, would provide an incentive to improve personal financial management practices. This, in turn, would encourage military personnel to contribute to improvement of the national savings rate.

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I. INTRODUCTION

The U.S. savings rate has been declining for the past three decades and is among the lowest of all the industrialized nations. One of the effects of our low savings rate is a higher cost of capital for U.S. firms. This in turn discourages investment, reduces productivity and limits economic growth of the country. An additional anomaly of attracting foreign capital to meet the savings shortfall leads to a balance of trade deficit. It also results in the loss of domestic capital necessary to pay the ensuing interest.

This thesis introduces the evidence of the declining national savings rate, reviews the sectors of national savings (i.e., government, corporate and household), and discusses a number of adverse implications. The decline in net savings is attributed to dissaving by the federal government with persistent budget deficits as well as a decline in the household (or personal) savings sector. Research indicates that the decline in the savings rate and its implications are significant and that governmental action is needed to reverse this condition. Corrective action, however, must not transfer resources from one sector to another, but must raise the overall net rate.

Part of the reason for low personal savings in the United States is that the government discriminates against saving. It indirectly favors consumption by double taxation, first by taxing the initial income and second by taxing the interest earned from the savings. Our present taxing system, the income tax approach, could be changed gradually toward an expenditure (or consumption) tax system to neutralize this tax bias. Under the expenditure tax approach, households can choose savings options for their income that will not be immediately taxed. This system taxes only the income that is spent on consumption. This eliminates the bias towards an immediate consumption by reducing the disincentive to save. It is important to note that in a number of ways we have been gradually moving toward this system. Several options such as pension plans, investment in home ownership and certain life insurance policies allow income to be tax-deferred. Building tax shelters for income into our present tax system eliminates the double taxation and builds the personal savings rate.

Recognizing the need for increased savings, legislators have introduced profit-sharing and thrift savings plans for civilians but have not included the military. These programs are effective because contributions to these accounts are automatically withdrawn from the salary before taxes, and the earnings are tax deferred as well. Individual retirement accounts (IRAs) also provide a supplemental retirement benefit which increases long term savings and provides additional capital for economic growth. IRAs offer an incentive to defer up to $2000 per year of taxable income but have not achieved widespread participation.

IRAs do not offer the flexibility of employer-sponsored plans with respect to borrowing against assets. Employer-sponsored plans such as the 401(K), profit-sharing and thrift savings plans offer sweetened benefits that are more appealing than IRAs. These plans, specifically designed to meet the needs of their employees, are extremely popular. They enhance retirement benefits and thus serve to increase retention.

An example of this type of plan is the 403(b) or tax-sheltered annuity (TSA). This plan is available to nonprofit organizations and public school employees. Its benefits include a contribution limit of up to 20 percent of salary or $9,500 annually. Additionally, contributors can choose to invest in mutual funds or government-backed securities. In the latter case, funds can be borrowed against at low rates. This provides the flexibility of meeting intermediate savings goals such as educational expenses with a long-term savings account.

This research explains the benefits of extending this program's eligibility to active duty military personnel while tailoring the contribution requirements to the military compensation system. The military compensation system rewards both longevity and rank. The case is made for allowing incremental increases in the eligibility of service members to contribute to a tax-sheltered savings plan as part of a broad effort to increase national savings.

Nonprofit organizations provide an extra retirement incentive to their employees which allows them to compete more effectively with the private sector. The all-volunteer military force may also be considered a nonprofit organization. Nonprofit organizations provide social benefits to the public without profit. The military provides the general public with the social benefit of common defense.

The need for a similar employer-sponsored saving program for active duty personnel is based principally on the equity issue. Civilians have the option of using employer-sponsored savings plans, while members of the military do not. Yet active duty military personnel have special needs and attributes. These factors include the military's relatively young age-group, its high frequency of directed moves and the existence of a military/civilian pay gap. Military pay scales have to be competitive with the private sector. Extending a TSA type of program to the military would offer an additional retirement benefit. This would help offset the approximate 10 percent pay gap between the military and its civilian counterparts.

Further evidence is reviewed that may ultimately be of benefit to the government as well. These include increasing retention and targeting benefits to those who elect to participate (career active duty personnel). This savings program would not affect retirement outlays for retirees.

The proposed savings program would be called an Account for Saving Active Pay, or ASAP. The 1990 pay schedule was used to calculate the maximum account balance that could be achieved for Officers and Enlisted personnel using ASAP.

The thrift savings plan, offered to government civilian employees, was used to approximate participation levels for the ASAP program. The ensuing costs to the government for implementing the program, resulting from the deferred tax, were estimated and compared with the benefits.

This thesis concludes that it is both feasible and ultimately cost-effective to extend TSA eligibility to active duty military personnel. The proposed ASAP program would be most successful by phasing in benefits and maintaining the heirarchical principle of the military compensation system. Specifically, it would permit contributions of 1 percent of base pay, up to the 20 percent that TSAs allow, per year of military service. The program as envisioned would dovetail into existing initiatives to improve personal financial management practices. This would, in turn, help improve the national savings rate.

II. THE NATIONAL SAVINGS PROBLEM

In a statement on September 19, 1989, before the Committee on the Budget in the House of Representatives, the Director of the Congressional Budget Office, Robert D. Reischauer, said:

> The American rate of saving is low both by historical and international standards. Since 1980, net national saving has averaged only 3.4 percent of net national product (gross national product less capital depreciation) compared with 8.2 percent in the 1950-1979 period.
>
> Americans also save far less than residents of other industrialized countries. During the 1980s, the United States saving rate has been only 60 percent of the average for members of the Organisation for Economic Cooperation and Development (OECD).[Ref. 1]

Figure 2.1 illustrates the low U.S. net national saving as compared with the other 19 OECD countries.

A November 8, 1989 report from the Congressional Research Service (CRS), entitled "The Low Saving Rate: Perspectives and Policy Options," highlights the historical phenomenon in Table 2.1. The CRS report specifically warns:

> The massive deterioration in the net national saving rate should not go unnoticed. For three decades, 1950 through 1979, the net national saving rate averaged a surprisingly near constant 7.5 percent of GNP. During the decade of the 1980s this ratio fell by more than half to 3.1 percent. This serious erosion of the net national saving rate could have profound implications for the growth of the capital stock and the long run rise in productivity. [Ref. 2]

Some economists (e.g., Hendershott and Peek) have tried to "repackage" the numbers by adding "forward looking spending"

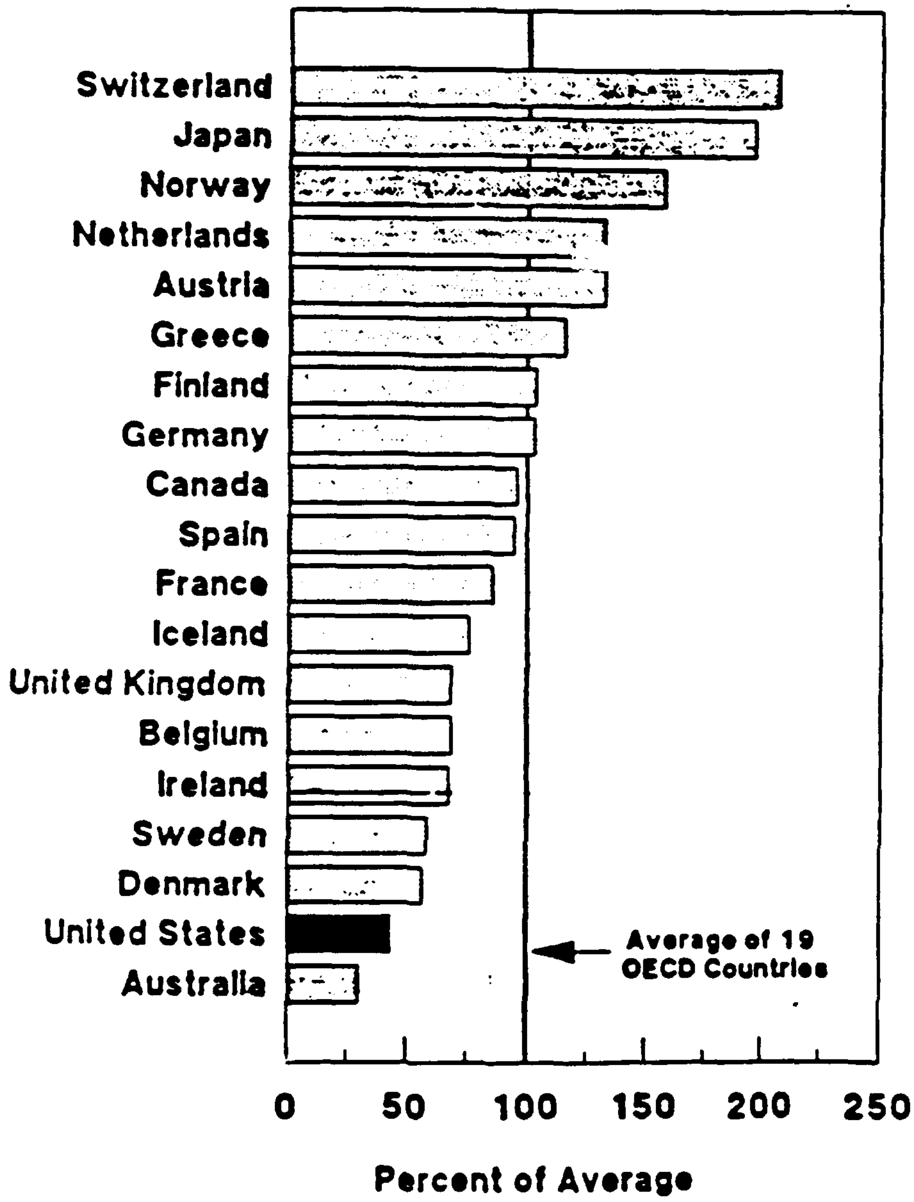

FIGURE 2.1 Net National Saving, 1980-1986

Source: Congressional Budget Office calculations based on data from the Organization for Economic Cooperation and Development.[Ref. 1:p. 2]

TABLE 2.1. NATIONAL SAVING BY SECTOR

(as a percent of GNP)

Years	Personal	Business	Net of Depreciation	Total Gov't	Net Public& Private
1950-59	4.7	11.5	7.6	-0.1	7.5
1960-69	4.6	12.0	8.1	-0.3	7.8
1970-79	5.6	12.0	8.1	-0.9	7.3
1980-88	3.8	12.9	5.6	-2.6	3.1
1984	4.4	13.5	6.8	-2.8	4.1
1985	3.1	13.4	5.7	-3.3	2.4
1986	3.0	12.9	4.9	-3.4	1.5
1987	2.3	12.4	3.7	-2.5	1.2
1988	3.0	12.2	4.6	-2.0	2.6
1989:1st half	3.9	11.5	5.0	-2.0	3.0

The last column is equal to the sum of private sector saving net depreciation and total public sector saving.

Source: U.S. Department of Commerce.[Ref. 2:p. 13] such as military hardware, education outlays and research and development to U.S. saving in attempts to make U.S. savings compare more favorably with other developed countries. Although "recategorizing" can appear to close a savings gap with high saving countries, it does not change the substantial drop observed in the U.S. saving trend during the 1980's. The fact that these trends signal a significant drop in net national saving is widely recognized by economists. The debate among economists concerning the U.S. saving rate ranges from conservative economists to liberals. Some well known economists feel that in order to restore growth, the U.S. must raise its savings rate.

> This camp cuts across party lines including liberals such as Harvard economist Benjamin Friedman, author of Day of Reckoning: "The Consequences of American Economic Policy in the 1980's" ("Society Pays for Eating its Seed Corn.") as well as conservatives such as investment banker Peter G. Peterson, whose new book On Borrowed Time attributes America's woes to a consumption and entitlement binge [Ref. 3].

Fred Block, a University of Pennsylvania professor challenges the basis for these arguments by calculating the saving rate by using the "flow of funds" data from the Federal Reserve.[Ref. 3] Reviewing the alternative methods used by the Department of Commerce to calculate the gross private saving statistics can help us to attain a more informed position.

> National saving reflects the actions of the three principle sectors of the economy. Household saving is the result of the spending decisions by individuals and families; business saving reflects decisions by firms to retain after-tax profits; and

government saving is the outcome of the political debate over revenue measures and spending priorities. [Ref. 4]

Economic discussion is often trained on a sector such as the government sector with its budget deficit, but its implied focus is the improvement of national saving or the cumulative effect. It is important to think of all sectors as contributing to the national saving rate in a collective sense. Additions to one sector could lead to a correspon-ding drop in another, resulting in no overall increase. Net national saving is the critical quantity used because it is the amount of resources remaining after depreciation is accounted for. It conceptually makes sense to compare figures after depreciation because additional investment cannot take place unless the capital that has worn out has been replaced. Gross national product (GNP) is the measure of goods and services produced during a specific period of time. National savings can be obtained by comparing it against one of two benchmarks. They include the GNP or the net national product (GNP corrected for depreciation). The first results in gross national savings and the second results in net national savings. The trends are calculated in terms of percentages.

Calculating savings is straightforward for the corporate and government sectors. However, the personal saving rate in the household sector can be tabulated in two different ways, the National Income and Products Accounts (NIPA) approach and the Flow of Funds (FOF) approach.

Personal saving, by definition, is the disposable income that is not spent on consumption. The NIPA approach differs from the FOF approach in tabulating the personal saving rate in its classification of consumer consumption. In the conventional NIPA measure, expenditures on housing are treated as investment (savings) while expenditures on all other durables are considered consumption. The FOF treats all expenditures on consumer durables (e.g., autos, major appliances and furniture) as long-term investment. The result is a higher personal saving rate using the FOF method. The U.S., with its propensity for buying durables, would not display as dramatic a drop in personal saving using the FOF calculation method. A 1984 study entitled Conflicting Measures of Private Saving suggests that "for the early 1980's the national income measure of private saving may be less subject to error than the alternative FOF measure."[Ref. 2:p. 12] The point is, as long as we use historical statistical methods consistently, a dramatic decrease in the net saving rate is revealed.

A. LOANABLE FUNDS

The most important implication of low savings is that it can lead to slow growth in living standards. This can be explained through the effect on the loanable funds market.* Net savings from the private sector feed the loanable funds market. However, competition for the resource pool comes from the government sector and the corporate sector. Figure 2.2 illustrates how the corporate sector borrows for investment from the loanable funds market. It also shows that when the federal government operates at a budget deficit (expenditures exceeding revenues), the government becomes a net borrower from the loanable funds market. This results in competition between the government and the corporate sector for the limited pool of saved resources. The "crowding out"** that takes place raises the interest rates higher than they would normally be. This crowding out diverts saved resources away from capital formation and thereby reduces the nation's ability to grow. The

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*The loanable funds market coordinates the actions of borrowers and lenders. This market permits households, businesses, and governments to borrow against their assets or against future expected income. As the circular flow of income implies, households are generally net suppliers of loanable funds (See Figure 2.2).[Ref. 5]

**Crowding out is spoken of in terms of competition among borrowers in the financial markets [Ref. 6]. It results in high interest rates generated by budget deficits that are financed by borrowing in the private loanable funds market [Ref. 5:p. 530].

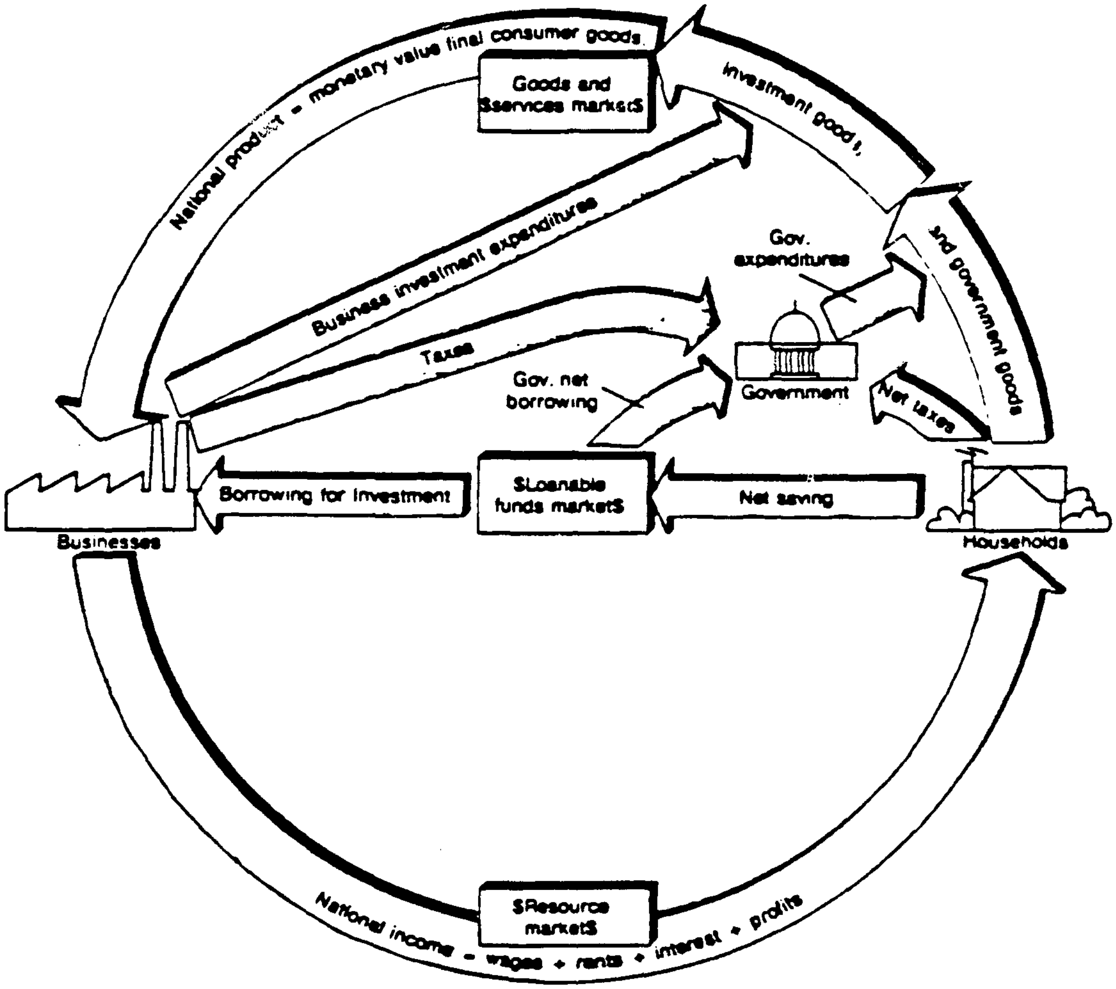

FIGURE 2.2 Macroecomomic Market Model

of the Circular Flow of Income

Source: <u>Macroeconomics</u>.[Ref. 5:p. 179]

Businesses and governments often demand loanable funds to finance capital investment projects and other expenditures. Financial institutions, such as savings and loan associations, commercial banks, insurance companies, pension funds, and the stock and bond markets form the core of this market.[Ref. 5:p. 189] dynamics of the forces on the loanable funds market are illustrated in Figure 2.2.

The other principle sources funding the pool of investable resources are state and local government budget surpluses and net inflows of foreign capital. These are not shown on the basic macroeconomic market model in Figure 2.2. However, they can be thought of as an adjustment to the loanable funds market.

State and local government surpluses help to keep interest rates down, although they are small in comparison to the recent federal government's deficits (see Figure 2.3). Thus, the government remains a net borrower. This still leaves the government sector preempting a significant share of net savings.

A net inflow of foreign capital can be attracted to the loanable funds market by favorable interest rates. "The substitution of foreign capital for U.S. saving, while maintaining the growth of capital per worker, still depresses the growth of living standards."[Ref. 1:p. 5] It does this when future national resources are sacrificed in order to pay the accumulating interest and dividends to foreign creditors.

B. BALANCE OF TRADE

Another important implication of low national saving is the effect on national trade accounts. Low national savings means that higher U.S. interest rates are necessary to

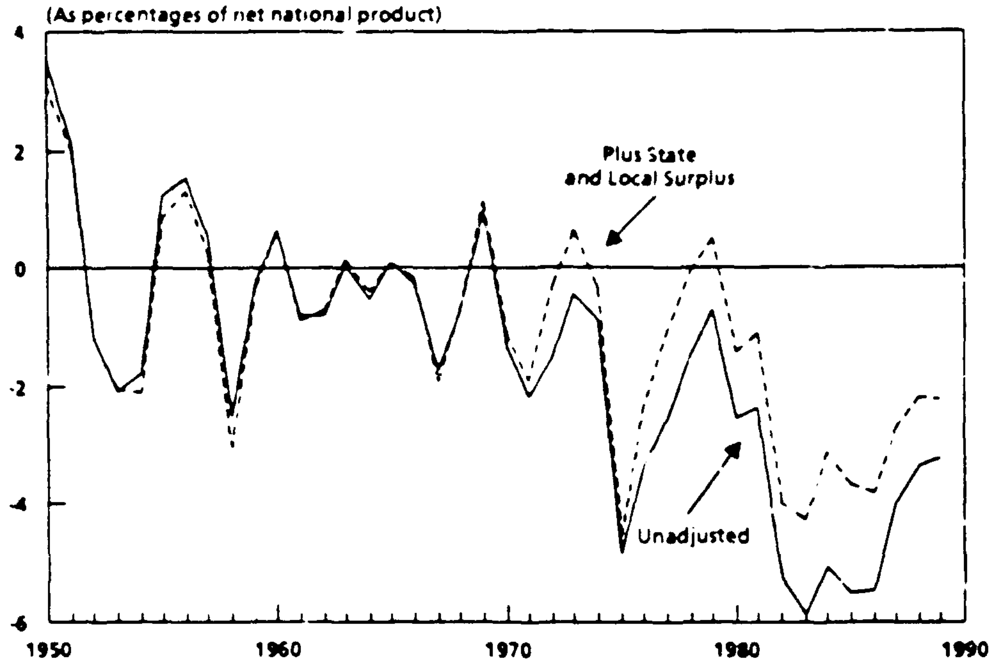

FIGURE 2.3

Federal Deficits: Before and After Adding State and Local Surplus, (1950-1989)

Source: Congressional Budget Office, based on data from the Department of Commerce, Bureau of Economic Analysis.

Note: Deficits are measured on a national income and product accounts basis, in terms of calendar years. Deficits are treated as negative, surpluses as positive.[Ref. 6] attract capital. If the higher interest rates do not attract domestic capital, the shortfall can be made up from foreign capital. But when this happens, it also drives up the price of the dollar because foreigners will convert more of their currency to acquire dollars. This results in a disadvantage for U.S. exports, hence contributing to our negative balance of trade. The result is the deterioration of the balance of international transactions in goods and services, i.e. a large trade deficit. The U.S. deficit on goods and services transactions is "the mirror image of the increased inflow of foreign capital" [Ref. 7].

The immediate benefit of attracting foreign capital has been at the expense of the competitive export industries. The past decade has seen huge U.S. trade deficits and volatile exchange rates which create additional risks for international industries. Protecting industries, erecting trade barriers and imposing quotas can, in turn, be detrimental to international trade and lower living standards both in the U.S and abroad.

C. SAVING AND GROWTH

The correlation between higher rates of saving and relatively faster rates of economic growth is noteworthy. "The correlation coefficient between saving and growth rates for the seven largest countries that belong to the Organization for Economic Cooperation and Development (OECD) is 0.953 ."[Ref. 2:p. 2] Considering that the range of possible values is between +1.C and -1.0, this is statistically very high (95% confidence). This does not suggest that higher saving rates caused the higher growth, but does imply that when higher saving rates are present, nations have a greater chance for growth.

D. SAVING AND MONETARY CONTROL

The Federal Reserve Board Chairman, Alan Greenspan, met with a group of Republican senators to hear concerns about a credit crunch and a stagnating economy in July of 1990. He noted that:

> ...if [he] eased credit now, that might boost the economy for the next six months or so but would ultimately result in more inflation and force the Fed to crack down even harder in the future... [He also] argued that with slow growth in the labor force, the only way to get the economy moving is to increase the output, or productivity, of the existing labor force. And the best way to improve productivity, he argued, is to increase investment by boosting national savings and cutting the budget deficit.[Ref. 8]

The point here is that although the Fed can control interst rates, it is constrained by the effect of "crowding out" in the loanable funds market. The corrective link in the chain of events has to come prior to the Federal Reserve's adjustment in interest rates, or risk runaway inflation. That corrective link must be lower government sector borrowing requirements, an increase in private sector savings, or both. "In 1987, public borrowing [in the U.S.] took 55% of net private savings; in Western Europe the average was 20%, and in Japan it was only 1½%."[Ref. 9]

This leads us to believe that government initiated crowding out is much greater in the U.S. markets than abroad. This crowding out drives up real interest rates. Intuitively, one would expect these rising real interest rates would attract more potential domestic investors to supply the loanable funds market with more savings. But, this did not happen in the 1980s. Loosening monetary policy can help the economy expand, but more domestic savings still needs to be generated or public borrowing abated to avoid inflation.

E. CONSUMPTION HABITS

Examining consumption habits in the 1980s can help explain part of the low saving rates generated by the household sector. During the period 1979-1982, the U.S. inflation rate was 11 percent. Since 1982, inflation has subsided to rates below five percent.[Ref. 10] The threat of high inflation encourages consumers to buy durable goods immediately, rather than waiting. Therefore, if consumers expected higher inflation they may have consumed more and consequently saved less.

Additionally, consumers may have been more inclined to borrow than to save for purchases. The tax structure biased consumer decision-making toward debt financing because interest payments were fully deductible. In addition the rule of using "other peoples' money" for leverage during inflationary periods created healthy capital gains and made debt financing more desirable than equity financing. Peter Lynch, former manager of the best performing mutual fund (Magellan), recommends buying a house as your first investment. He explains:

> Because of leverage, if you buy a $100,000 house for 20% down and the value increases by 5% a year, you are making a 25% return on your down payment, and the interest on the loan is tax-deductible.[Ref. 11]

Imagine the net worth built during the high inflation years. Most homeowners did quite well for themselves, and it is conceivable that many thought the family house was doing all the saving for them. More disposable income could then be consumed and debt financed with deductible interest. Inflation hedges were "king" from the late 1970s to the late 1980s. Inefficient tax-shelter schemes designed to lose tax-deductible money for years then suddenly pay off with an appreciated asset sale, flourished.

Was this irrational consumption? Not at all. Commercial property prices rose approximately 60% more than inflation in the last decade [Ref. 12]. Perhaps the inflation hedges also carried some hopes for high inflation with them in the 1980s. The problem occurs when net worth drops and a full package of debt is left behind. Many farmers borrowed heavily and many bank failures in the farm states resulted.[Ref. 12:p. 32] The GNP fixed-weight price index, the broadest economy-wide measure of inflation, rose 4.1 percent in 1989, well below its 9.8-percent rate in 1980 and down from 4.5 percent in 1988 [Ref. 4:p. 177]. The drop in inflation should have caused a rebound in private sector saving, but the consumption habit seems to be hard to change.

F. THE COST OF CAPITAL

The detrimental effect of the high cost of capital on competitiveness is especially hard to ignore. Business Week cited a study showing that:

> U.S. companies must pay five times what their Japanese rivals pay to raise capital. The cause: an anemic national savings rate. The effect: an American company can afford to invest in a product or technology only if it is expected to be profitable in three years. But a Japanese competitor can wait an astonishing twelve years to break even.[Ref. 13]

Aided by the staying power advantage that comes with the lower cost of capital, it is easy to understand how the sound business strategy of patient investing and increasing market share has been refined by our competitors. U.S. financial executives, in order to compete, are forced to cut costs to keep the bottom line up. Research and development, with its uncertain five to seven year payoff, may be among the first costs to be trimmed.

The low cost of capital abroad makes our competitors the risk-takers and leads to criticism of U.S. managers and investors as being short-sighted.

> Even big high-tech companies, such as Digital Equipment Corp., are feeling pressure to soft pedal expensive long range projects with uncertain futures. Digital spent $1.3 billion, or 11% of sales on R&D in 1988. But management would prefer to spend even more--especially on long-term R&D projects. I'm happy if the payoff doesn't come for five to ten

> years, says Samuel H. Fuller, Digital's vice-president for research. But the markets, he complains, tend to force everything into a six to twelve month time frame.[Ref. 13:p. 157]

Are these examples of short-sighted management or are they competing as well as can be expected under these conditions? The answer is clear when we consider they are trained executives who use proven financial analysis to achieve the highest return on assets (ROA) possible. However, they can be squeezed out of profitable markets and can lose potentially productive research in the long run. Craig J. Fuller, managing director of Chancellor Capital Management, says:

> Japan Inc. and Southeast Asia Inc. have a low cost of capital and a willingness to bet on the future, while the American public market is focused on the next quarter's earnings.[Ref. 13:p. 157]

Companies forced to fund long-term competitive R&D projects with interest rates compounding against them cannot justify the investments. This situation has produced the impetus for consortia (e.g., Sematech), global mergers, and the relaxing of antitrust regulations. The question is are they solutions or temporary adjustments?

G. THE IMPLICATIONS OF LOW SAVINGS ON BUSINESS EXPANSION

Companies would enter into competitive long-term projects if the marginal cost of capital justified it. An increased supply of loanable funds through higher savings would lower interest rates enough to encourage risk taking.

The problem is encouraging long-term business expansion. In an article entitled "Savings, Capital Formation, and National Security" for the SAIS Review, it is argued that the root of the problem is the low savings rate in conjunction with the large budget deficit:

> The consistently higher returns obtained by U.S. companies [referencing their profitability surveys cited from Fortune] support the hypothesis that the decline in U.S. competitiveness is primarily caused by inadequate capital spending.[Ref. 14]

The authors illustrate the effect of inadequate capital formation with a hypothetical example:

> Suppose that in 1983 scientists and engineers of two companies, one American and one Japanese, had each developed similar devices that would be useful in the field of telecommunications. Both companies calculated that these devices, after investment of $220 million, would achieve in seven years sales of $100 million per year and would yield a return of 12 percent per year on investment. The Japanese company would have entered this business; in Japan, with its high savings rate, 12 percent was an acceptable projected return on an investment of this type. But in the United States, with its much lower savings rate, interest rates were higher and the projected return for an investment with the level of risk of such a project had to exceed 20 percent at that time. [Ref. 14:p. 118]

This scenario demonstrates how other economies can have greater expansion than we, because of our inadequate savings rate.

> The basic problem is not myopic management but the low savings rate, which results in the expectation of a higher return on investment in the United States than in the other free-world nations.[Ref. 14:p. 119]

The main point needs to be underscored. Economic growth in the corporate sector depends on the ability of firms to make cost-effective expansion decisions. However, expensive capital can make innovative and potentially productive projects seem too risky to try. This tendency to concentrate on proven rate of return projects results in criticism for managers and investors as being short-sighted. The criticism is misplaced. Managers and investors are making rational decisions under the existing conditions. It is these economic conditions, beyond their control that need to be changed in order to spur long-term economic growth.

H. DEMOGRAPHICS

Proposed solutions to the saving problem must consider demographic shifts and global savings requirements. Future saving rates will be affected by the spike in the population caused by the "baby boom" generation, which includes those born between 1946 and 1964.

A life-cycle model of savings distinguishes three different propensities to save during a lifetime: 20-45, where relatively low savings takes place; 45-64, which is the strongest period, building for retirement while earning the highest income; and, over 64, where general dissavings takes place. Coupling this information with the baby boom era we observe this generation was in its lowest saving years during the entire 1980s.

The implication is that in the early years of the twenty-first century this group will be in their peak earning and saving years. The second boomlet peak year babies will turn 45 in the year 2002. Some economists have theorized that a wave of personal savings will be generated by the baby boomers who, when in their 40's, will start saving for retirement and their childrens' tuitions.*

Other economists are not as convinced, citing evidence that "baby boomers" have thus far spent more at every age. These economists have introduced additional mitigating factors that suggest an automatic surge in personal savings may not be the case. Some have attempted to quantify the order of magnitude that the baby-boom generation building of savings is most likely to provide.

> Based on population trends and age-related income and saving profiles, McKelvey and Benderly [economists at Goldman, Sachs & Co.] calculate that the aging of the baby-boom generation will augment the personal saving rate by less than a percentage point between now and the turn of the century. Economists at Data Resources (DRI) think it could be even less--on the order of three-tenths of a percentage point.[Ref. 15]

> That high-earning, high saving group between 45 and 64 has been shrinking as a proportion of the population since 1970. During the 1990's, its share will rise from 29 percent to 35 percent though the salutory effect on saving may be blunted by the growth of the nonsaving, over-65 population.[Ref. 16]

In a review entitled "Will The Baby Boomers Bail Out America?," the authors of Rust to Riches are criticized for being too passive and for overrating the demographics.

> [They] seem content to rely on demographic shifts to right all the wrongs of the past two decades. That line of thinking is much too passive. What we really need is action and soon.[Ref. 17]

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*Rust to Riches: The Coming of the Second Industrial Revolution. Allen, Deborah and Rutledge, John. New York: Harper and Row, 1989.

This clearly argues for the government to target the savings problem now with incentives to encourage savings and deficit reduction.

The consensus is that the demographics are an important consideration for putting upward pressure on savings rates, but may only account for modest rises. But incentives that can affect spending and saving habits across the demographic chart may ultimately prove more important if we are to see a return to previous levels of domestic saving before early in the next century.

I. GLOBAL DEMAND FOR SAVINGS

When we view the world from the closed-economy perspective, it is capable of transferring savings among countries, but not capable of investing more than it saves. Therefore, it is critical for countries involved in leadership positions to generate greater savings--investable resources--to meet huge future demands. The world resource pool of savings will most likely be strained to meet the ever-increasing demand involving the reconstruction in Eastern Europe and the development requirements of Latin and South America, Africa and the poor countries in Asia. Global investment opportunities are most likely to be considerable, perhaps even including China.

If savings are adequate to hold interest rates down, expansion will be more rapid than otherwise possible. Although we cannot control the future requirements for savings, we must consider them in our planning. The implication is that a return to the normal U.S. historical level of saving may not be high enough when faced with a more likely greater demand for savings.

If we agree that increased national savings is necessary, the question becomes how to increase the national savings rate. The answer is through actions that raise individual savings components (government, corporate and personal) by more than they lower the other sectors. In short, we must increase the net national savings account. The focus is clear, but the means to get there provides the difficulty.

J. THE GOVERNMENT SECTOR

The government sector can become a net saver by achieving a budget surplus. The existence of the Balanced Budget Act (Gramm-Rudman-Hollings) suggests that this is a legislative priority. The government sector has been progressively draining national savings by its failure to balance its annual budgets. Spending expansion has been difficult to control, especially in the area of entitlements.

The Gramm-Rudman-Hollings (GRH) law set up targets to eliminate annual budget deficits (See Table 2.2). Initially, targets were set up to gradually decrease the budget deficit to 0 by 1991. In 1987, these targets had to be revised with the new goal of eliminating the deficit by 1993. There has been much criticism of the federal government for its failure to meet these targets. However, since the adoption of GRH, deficits have been "far below the path projected prior to the adoption of GRH."[Ref. 4:p. 71]

Evidence indicates the deficit problem is still with us and is likely to be for some time. GRH has reduced Federal borrowing, and for that reason it has been valuable. However, we still need more discipline and control in the government sector in order to raise net national saving.

Charles Schultze, of the Brookings Institution, suggests that "to achieve a reasonable accumulation of national saving in the 1990s as a whole, budget policy should probably aim for a gradual transition to an overall surplus of about 1½ percent of national income for the last half of the 1990s."[Ref 18] Schultze argues that "the rise in the federal budget has been a major contributor to [the] fall in national saving. Its elimination, and indeed conversion into a surplus, may be the only sure way to restore a healthy level of national saving."[Ref 18:p. 26] According to his reasoning, if the government appears powerless to induce personal saving, it must make up the difference.

TABLE 2.2 GRH AND BUDGET DEFICITS: THE RECORD

(Billions of dollars)

Fiscal Year	1985 Target	1987 Target	Actual Deficit	Actual as percent of GNP
1986................	171.9	171.9	221.2	5.3
1987................	144.0	144.0	149.7	3.4
1988................	108.0	144.0	155.1	3.2
1989................	72.0	136.0	152.0	2.9
1990................	36.0	100.0	NA	NA
1991................	.0	64.0	NA	NA
1992................	.0	28.0	NA	NA
1993................	.0	.0	NA	NA

Sources: Department of the Treasury and Office of Management and Budget.[Ref. 4:p. 72]

K. THE PERSONAL SECTOR

A high saving country like Japan does not seem "powerless" to induce its private sector to save (See Table 2.3.) It has accomplished high personal saving rates in part by moving away from the tax bias (taxing interest earned on savings) and by providing Japanese savers with greater returns.

> The response of household saving to changes in the rate of return on saving is a critical issue, because tax policy directly affects the rate of return...empirical studies on balance suggest that saving increases modestly with higher rates of return. [Ref 4:p. 138]

Table 2.3 indicates the relationship among the three sectors of saving and the total net saving rate. Of the three sectors, households account for, by far, the largest contribution to saving. By adjusting the tax structure, governments can influence the relative saving. In an essay entitled: "Are There Lessons for the United States in the Japanese Tax System?," the authors cite an incentive for saving as a principle finding:

> The single most important feature of the tax law that permits [investors to keep a far higher fraction of the return of their investments than their American counterparts] is Japan's generous tax-sheltered savings plans.[Ref. 19]
>
> Each individual is allowed to have four nontaxable accounts for different purposes (comparable to our IRAs). These four accounts allow an individual to shelter about $82,500 from taxation. It is estimated that about 70 percent of the ownership and debt and equity capital uses these tax-free accumulation vehicles. They dwarf the similar Individual Retirement Accounts in the United States.[Ref. 19:p. 313]]

TABLE 2.3 NET SAVING RATES, BY SECTOR, 1980-1987

(NET SAVING AS % OF NET NATIONAL INCOME)

	Total	Government*	Households	Enterprises
Japan	20.3	4.1	13.5	2.7
Italy	12.8	na	na	na
W. Germany	10.8	1.4	8.9	0.5
Canada	9.9	-3.9	9.7	4.1
France	8.6	na	na	na
Britain	6.3	-1.6	5.0	3.4
United States	4.2	-3.9	6.2	2.0

*includes some public physical capital investment as saving.

Source: OMB [Ref. 20]

This saving investment lesson could be adapted in the U.S. by moving toward a consumption or expenditure tax philosophy. Under our income tax system, income is taxed and if a portion is saved (not immediately spent on consumption), interest earned on those savings is again taxed. This double taxation of saving represents a bias against saving. It is important to note that the consumption tax system envisioned here is not a sales tax or value-added tax. It is:

> A personal tax where the base is income less savings. So-called "qualifying accounts" would be tax deductible. The funds could be invested in savings accounts, bonds, stocks, mutual funds and a wide array of financial instruments. The earnings on the assets of the account would not be taxed unless they were withdrawn and spent.[Ref. 21]

In many respects we are halfway toward a consumption tax concept. With pension plans, investment in housing (rollover returns can remain untaxed), and in return life insurance programs, the tax may be deferred. The consumption tax could be made as progressive as desired by varying the rate. Other advantages include its simplicity of cash-flow, inflation-proofing, and neutrality toward spending.

Michael Boskin and John Shoven advocate the implementation of a consumption tax system by:

> extreme liberalization of Keogh and IRA pension savings vehicles. If the limits on these (vehicles) were raised, if the assets that could be held were very inclusive and if the taxable withdrawal could be made at any time, then these existing institutions could effectively institute a consumption or expenditure tax.[Ref. 21:p. 215]

Our present income tax system favors consumption over saving. Moving toward a more neutral system would almost certainly immediately improve savings.

The Family Saving Account (FSA), a proposal put forward by the Bush Administration, represents an example of the commitment to promote national saving. It is "best viewed as part of the larger program to reduce the bias against saving in the U.S." [Ref. 4:p. 139] This thesis suggests that another part of that larger program could be an Account for Saving Active Pay (ASAP), a tax-sheltered plan proposed for active duty military personnel. The details of this plan will be described in Chapter VI.

L. THE CORPORATE SECTOR

Saving in the *corporate sector* has remained remarkably stable, compared to the U.S. household and government sectors, during the last 30 years (see Table 2.1). Comparing a high saving country such as Japan with the United States, by sector, reveals where the emphasis on saving is generated. Table 2.3 shows that Japan's net saving by sector is 8.0 percent higher than the U.S. in the government sector, 7.3 percent higher than the U.S. in the household sector, and only .7 percent higher than the U.S. in the corporate sector. This order of magnitude suggests that if a meaningful change in national saving is to be a priority, the emphasis should be placed on the government and household sectors.

M. SUMMARY

Our low national savings adversely affects our economic growth. Research indicates that the decline in the savings rate and its implications for the economy are real and significant and that the government needs to reverse this condition. It suggests the need to establish incentives, through a carefully designed tax structure, to promote savings that will provide us with the catalyst for competitiveness which we need. We are moving somewhat haphazardly toward adopting incentives to promote national savings. Many improvements are possible and some are presently being pursued.

III. SAVINGS AND THE MILITARY

The low national savings rate affects all citizens, but it is particularly costly to the military. Annual pay increases for the all volunteer force military are publicly debated each year with the objective of maintaining their competitiveness with civilian employment. However, the low saving rate of the government sector makes achieving this objective difficult. Congress is faced with a persistent and worsening deficit problem. One aspect of the deficit problem is uncontrollable spending, that is, funding for entitlement programs and interest on the debt.

Members of Congress realize that the low national saving rate is a problem, but they are constrained by the difficulty involved in cutting mandatory program growth. Interest must be paid and reducing entitlement programs is difficult. These programs are broadly supported by voters and changes must be made by legislation. This is in contrast with discretionary spending programs like defense, which must receive annual authorization and appropriations.

Legislators are forced to concentrate on the controllable items like national defense. In particular, military pay raises are annually debated and reduced relative to inflation. The pressure created by the low saving rate is ultimately felt by military members. Each raise that is less than the rate of inflation yields less disposable income. With less disposable income, military personnel will have to reduce their savings in order to maintain the same standard of living.

The Director of the Office of Management and Budget (OMB), Richard Darman, in his introduction of the budget for fiscal year 1991, points out the growth in entitlements is one of the potential liabilities in the budget. He refers to them as "hidden pacmen" because they consume a larger portion of the budget each year. He indicates that:

> these mandatory programs plus net interest expenditures account for almost 62 percent of the budget. Since these programs generally have broad based and well-represented beneficiary populations, they tend to have a powerful claim on resources and grow faster than the economy as a whole."[Ref. 22]

As these mandatory programs grow and account for a greater share of the budget, Congress must look for places where it can close the pursestrings. The Congressional Budget Office (CBO) annually suggests a series of reductions that could be made, including limiting military pay raises. In February 1989, the CBO suggested how the trend of eroding military salaries began:

> During the 1980s, the formal mechanism for determining the annual military pay raise has largely been abandoned in favor of a series of proposals by the Administration and compromises in the Congress. The result has generally been an increase that is smaller than the average rise in private-sector pay.[Ref.23]

Congress rationalizes this trend by noting that retention and recruitment appear satisfactory. But a continuation of the trend of eroding service member compensation will have some delayed detrimental effects.

Replacing career military personnel is more difficult than it is in the civilian sector. Some jobs in the service can be contracted out to the civilian sector (e.g., aircraft mechanics), but not when the active forces are needed for armed conflict.

The delayed effect of decreased retention due to cuts in compensation makes force management more difficult. Some critics consider this to be an inefficiency in the current retirement system. It results, in part, from the tendency of new recruits to underestimate the value of the retirement system as a significant portion of their total compensation benefits. The retirement system

> has little influence on prospective recruits or personnel in their first enlistment. This results from the assumption that young people have a strong preference for current rather than deferred income.
>
> It provides a strong incentive for personnel in their 12th through 19th years of service to remain on active duty...in part because of the preference for deferred income by older people, but more importantly, because those who leave before completing 20 years of service receive nothing.[Ref. 24]

This may argue for including some vesting in the retirement system, but it also points out that the full effects from recent cuts in retirement benefits and smaller pay increases have not as yet completely manifested themselves. Other than decreased retention, this manifestation can take the form of decreases in morale, productivity and personal financial management.

The CBO, for its part, has indicated that although limiting pay raises can provide significant annual savings, there are substantial risks. They warn that

> Projections of the effects of withholding military pay raises below those in the private sector are subject to some uncertainty. Manpower analysts do not completely understand why recruiting and retention have remained strong in recent years despite falling relative pay and an improving economy: today's service members may be less sensitive to these pressures than their predecessors; or the full effects of these changes still may not have been felt.[Ref. 23:p. 82]

The Government Accounting Office (GAO) provides evidence that this lowering of military pay raises is comprehensive throughout the military. They state:

> Military pay raise percentages have been lower in recent years than private-sector pay raise percentages. Recent comparison of selected military and civilian jobs shows that in 94 percent of them, military pay was less than the pay in the private sector. [Ref. 24:p. 43]

Inflation has been rising at a rate of 5 percent per year, since 1982, and rose 4.1 percent in 1989. [Ref. 4:p. 177] The military needs annual pay raises of equal amounts just to maintain equilibrium. An absolute rise of anything less, in effect, is a reduction in buying power for military personnel. This has been the trend. The Department of Defense Manpower Requirements Report--Fiscal Year 1990 states the situation:

> The military must be able to offer fair compensation that is competitive with civilian employment wages. Continuation of pay caps will seriously damage our ability to attract and retain quality manpower. Pay caps from FY 1983-1988 resulted in a disparity between military pay and private sector wage growth of eleven percent, as measured by the Employment Cost Index. In FY 89, a 4.3 percent pay raise for the military members

became one of the highest priorities of the Department of Defense. The Congress supported the Department of Defense with a 4.1 percent increase and ended a consecutive six year trend in which the military pay raise was less than the civilian wage growth. This narrowed the gap to 10.1 percent. The disparity between military and private sector wages must continue to decrease. [Ref. 25]

The consequences of this pay gap may not be immediately felt, but they will over a period of time. Without pay comparability, retention will suffer, especially for the career personnel who cannot immediately be replaced.

The current compensation disparity between the military and the civilian sector does not show any sign of decreasing.

The military's 4.1 percent raise cleared a final hurdle October 19 when the Pentagon and Bush administration agreed to allow the 1991 defense authorization bill to provide service members the same size raise as approved for federal civilian employees.

[Senator John Glenn, D-Ohio, chairman of the Senate armed service committee on manpower and personnel], pointed out that the 4.1 percent raise is still less than the 5.4 inflation rate for the year and the 6.1 percent average rise in private sector salaries. 'But this is the best we would do. It does not improve the purchasing power of the service members but it prevents it from getting worse,' he said.

Rep. Herbert Bateman, R-Va., said the 4.1 percent raise 'is not adequate...but I believe this is the most we could get at this time of tight budgets.'[Ref. 26]

A. CHANGES IN THE MILITARY RETIREMENT SYSTEM

Another effect that the low national savings rate has on active duty military personnel is the dramatic changes in the retirement system. Congress has acted twice within six years to limit retirement benefits by adjusting the retirement pay formula. The latter change is considered "the most drastic erosion of retirement benefits [to] affect service members who enter active duty on or after August 1, 1986."[Ref. 27] The following changes were made as a result of the Military Retirement Reform Act of 1986:

* Retired pay formula changed from 2.5 times the creditable years of service up to a maximum of 75% of base pay to 2.5 times the years of creditable service minus one percentage point less than 30. Reduction to be eliminated at age 62 [Ref. 28:p. 30].

Table 3.1 below illustrates the cumulative difference:

TABLE 3.1 RETIRED PAY MULTIPLIER

YEARS OF SERVICE	MULTIPLIER BEFORE 62	MULTIPLIER AFTER 62
20	40.0	50.0
21	43.5	52.5
22	47.0	55.0
23	50.5	57.5
24	54.0	60.0
25	57.5	62.5
26	61.0	65.0
27	64.5	67.5
28	68.0	70.0
29	71.5	72.5
30	75.0	75.0

Source: [Ref. 28:p. 31]

* The cost of living adjustment mechanism is changed to provide CPI minus 1 for life with a one time restoral in the purchasing power of the annuity at age 62 [Ref. 28:p. 30].

> The changes mandated by the Retirement Reform Act will save the government (and cost retirees) almost $3 billion on an annual accrual basis [Ref. 28:p. 30].

Even this may be understated because the trend in cutting retirement benefits has not stopped.

> Negotiators also are proposing cost-of-living limits that would begin Dec. 1. 1991. Under the plan, inflation adjustments for retirees 62 or older would be limited to 1 percentage point less than inflation while federal retirees under the age of 62, including retired military members, would receive no cost-of-living increase.
>
> The idea of denying cost-of-living adjustment to retirees under the age of 62 has been proposed in the past by both the Congressional Budget Office and the White House's Office of Management and Budget. Proponents have argued that most retirees who are under 62 are not living solely on their federal pensions so they have less need for their retired pay to keep pace with inflation.[Ref. 26:p. 3]

Service members who have entered after the Reform Act will soon be deciding whether or not to remain on active duty. They will be comparing future military benefits with those the private sector offers. If these individuals lose confidence in their retirement purchasing power, retention may dramatically decline. However, evidence indicates that some personnel may underestimate the drop in their benefits until their senior years. For these personnel, drops in morale and productivity may result.

In summary, the savings problem in the U.S. at the national level adversely affects military personnel in both smaller pay increases and an erosion of retirement benefits. The uncertainty of congressional support and the loss of commitment to maintain competitiveness with the private sector may result in a serious loss of career military personnel within the next several years.

The erosion of pay adversely affects the military members' ability to adequately contribute to their own savings accounts. There is a need to reverse this trend as soon as possible.

IV. EMPLOYER-SPONSORED SAVINGS PLANS

This chapter will briefly describe several existing employer-sponsored savings plans which legislators have approved. Employer-sponsored plans include all tax-qualified plans such as pension, profit-sharing, 401(k), and 403(b) plans, and plans for civilian and military government employees [Ref. 29]. These plans are intended to supplement retirement benefits. They have also been adopted to increase long-term savings in the household sector and provide capital for economic growth. They are being reviewed to serve as a basis for a discussion of a similar program specifically tailored for the active duty military personnel.

A. SALARY REDUCTION PLANS

Thousands of companies now offer salary reduction or 401(k) plans, including "two-thirds of the Fortune 500 firms in 1986."[Ref. 30] The 401(k) allows contributions of up to $7979 or 20 percent of salary which is deducted from taxable income and grows untaxed until withdrawn.[Ref. 31] The plan may include investing in stocks, money-market or bond funds, or fixed income investments at the discretion of the employer. Employees can then choose the investment vehicle that is most suitable for them. Employers frequently match all or a portion of the contributions.[Ref. 30]

B. PROFIT SHARING

Over 350,000 companies in the U.S. have profit-sharing accounts for their employees. The companies contribute between 10 and 15 percent of their employees' pay. The annual contributions are calculated, based on the companies' earnings. The employees are typically allowed to contribute up to 6 percent and sometimes 10 percent of their salary. The accounts may also be invested in a variety of stock and bond funds or guaranteed income contracts (with fixed interest rates).[Ref. 30]

C. THRIFT SAVINGS PLANS (TSPs)

These plans are available to federal civilian employees. The Thrift Savings Plan (TSP), although just three years old, already has over 1.5 million member accounts, with investments and earnings exceeding $5 billion [Ref. 32]. Participants who are covered by the Federal Employees' Retirement System (FERS) may defer up to 10 percent of basic pay and members of the Civil Service Retirement System (CSRS) may defer up to 5 percent of basic pay each pay period.[Ref. 32:p.1]

FERS employees receive an automatic 1 percent contribution regardless of the member's participation. The Government will also contribute up to an additional 4 percent to match the contributions, if the employee maximizes this saving opportunity. The employee may contribute up to 10 percent of basic pay each pay period, not to exceed the IRS limit of $7979 (the 1990 limit) [Ref. 32:p. 3].

Table 4.1 illustrates the sliding scale for automatic and matching contributions by the government, the employer.

TABLE 4.1

PERCENT OF BASIC PAY CONTRIBUTED TO FERS ACCOUNTS

	Government Puts In:		
Employee Puts In:	Automatic Contribution	Matching Contribution	The Total Contribution
0	1	0	1
1	1	1	3
2	1	2	5
3	1	3	7
4	1	3.5	8.5
5	1	4	10
6-10	1	4	11-15

Source: Thrift Saving Plan pamphlet, May 1990.[Ref. 32:p. 3]

CSRS employees are allowed to contribute up to 5% of basic pay for each pay period but do not receive the additional contributions from the employer. It is possible for those who are currently in the CSRS to continue with the plan or to transfer to the newer FERS.

Both FERS and CSRS employees benefit from the tax deferral of income and the earnings on the accounts. Both are also allowed to borrow a minimum of $1000 at the

Government Securities Investment (G) Fund rate. In 1989, the rate was 8.81 percent. Borrowing is allowed for:

* the purchase of a primary residence;
* medical expenses;
* educational expenses; or,
* financial hardship cases.

There are three funds the plan offers for investment opportunities:

* Government Securities Investment (G) Fund
* Common Stock Index Investment (C) Fund
* Fixed Income Index Investment (F) Fund

[Ref. 32:p. 5]

TSP offers tax deferral, flexible investment opportunities, a loan program, withdrawal options and portability. Having portability in a plan means being able to roll cumulative benefits into a new plan when changing employers. The CSRS does not have portability as a feature. However, the newer FERS system has added portability as a benefit. Upon termination of their employment, members have the option to transfer their TSP money to an IRA, a new employer's qualified retirement plan, or they may leave it in the account and receive a deferred or immediate annuity. [Ref. 33:p. 23]

D. THE TSA OR 403(b) PLAN

A Tax-Sheltered Annuity (TSA), or 403(b) Plan, is a personal tax-sheltered savings plan. The plan is available to employees of public schools, nonprofit hospitals and nonprofit charitable, educational, scientific or religious groups. Payments to a TSA are automatically taken out of the salary before the paycheck is received. Because the contributions are deducted before pay, the income is tax-deferred and reduces the federal tax liability. Earnings on the account are also tax-deferred. The Internal Revenue Service (IRS) permits contributions to a TSA of up to 20 percent of the salary, or a maximum of $9500 annually.[Ref. 34]

The Tax-Sheltered Custodial Account, a 403(b)(7), is also an option which offers the same tax sheltering feature of the TSA to the same special employee groups. Instead of investing in a fixed annuity, which can be used as collateral for loans, it is possible to invest more aggressively (e.g., mutual funds or stock indexed accounts). These have more of a risk, but also offer the prospects of greater return.[Ref. 34]

All the major financial and insurance companies offer professional management of these accounts. The important point is that the employee can determine what is the most appropriate personal strategy. The flexibility of changing that strategy is also available.

Table 4.2 summarizes the relative differences among the employer-sponsored savings plans discussed in this chapter.

TABLE 4.2

SUMMARY OF EMPLOYER-SPONSORED SAVINGS PLANS

PROGRAM	AVAILABLE TO	1990 LIMITS ON CONTRIBUTIONS*	EMPLOYER CONTRIBUTIONS
401(k)	Private industry	$7979/20%	YES
Profit-Sharing	Private industry	15%	YES
THRIFT SAVINGS	Government civilians	$7979/10%	YES (FERS only)
TSA or 403(b)	Nonprofit Organizations	$9500/20%	NO

Employers have taken advantage of legislation to promote long-term savings for their employees. These plans provide an immediate tax break by making deductions before taxes and by sheltering the earnings. They also offer employees a systematic and flexible savings opportunity that is professionally managed. For some plans, the incentive is additionally sweetened by offering varying amounts of employer contributions. Even without the employer's contributions, each plan still increases the employee's saving potential.

Employer-sponsored savings plans are designed to meet employees' needs. Employers realize that employees are

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*These amounts are called "elective deferrals" because you choose (or elect) to set aside the money, and tax on the money is deferred until it is distributed to you.

The $7979 limit will be increased for inflation to reflect increases in the Consumer Price Index in future years.[Ref. 31] unlikely to work their entire careers for a single employer. They also realize that their employees are not a homogenous group. Individual employees need to assess their own retirement requirements and have the flexibility to choose options that are pertinent to them.

> It used to be that many American workers spent almost their entire careers working for a single employer who would take care of them after retirement. These days, Americans tend to change jobs more often--and sometimes even change careers. Now, it's often left up to workers to plan for the future if they don't stay with one employer long enough to qualify for retirement benefits.[Ref. 33:p. 3]

Pension plans and Social Security are not intended to replace 100% of pre-retirement income. Therefore, encouraging a supplement to retirement income through personal savings is essential. Employers have recognized, by providing additional saving opportunities to employees, that they are essentially multiplying their employees' income. This benefits the employer by placing him in a better position to compete for new employees and to retain valuable, experienced employees.

This chapter has briefly described some of the major employer-sponsored saving plans. These plans offer essential savings opportunities and include features such as portability and flexibility. Employee groups in both the private and the public sectors are eligible for various employer-sponsored saving plans. There is no comparable plan designed for active duty military personnel. Military personnel also need to supplement their pensions and social security with personal savings. The government, employer of the all-volunteer force, also stands to benefit by introducing a plan. The government will be better able to compete with the private sector for experienced personnel if a savings program for the military is established.

The remainder of this thesis will examine the military's need for a savings program. An employer-sponsored savings plan will then be proposed and evaluated. The purpose will be to mesh the savings needs of the military as an employee group with the government's need to raise the net national savings rate.

V. THE ACTIVE DUTY MEMBER'S NEED FOR A SAVINGS PROGRAM

As a matter of equity, active duty military personnel should have the same employer-sponsored savings opportunities as are offered to civilians. Compounding the equity situation is the fact that differences between service members and civilians may aggravate the already low savings rate characteristic of the former. These differences include a relatively young age-group, a complex compensation system and the frequency of directed moves. As a result, the need for a disciplined savings strategy for military personnel is acute.

Saving rate figures are not recorded by occupation groups, but for the country as a whole. Therefore, without utilizing potentially misleading survey data, we can only describe the savings behavior of military personnel by reviewing the motivation for and determinants of household saving.

> Household saving is thought to be motivated by a desire to finance major purchases, to provide a reserve for uncertainties for the future and for retirement, and to provide a bequest for one's heirs. Given these motivations, saving depends in addition on the size of one's income or such factors as the availability of credit, the amount of wealth, employer or government contributions to pension funds, and the age distribution of the population. [Ref. 2:p. 15]

A. AGE DISTRIBUTION

The requirement of maintaining a youthful and vigorous force determines the composition of the military. The majority of people who enter the military are between 18 and 22 years old. This age-group has historically had a low propensity for saving. Even if military members choose to stay in for a full 20 year career, they will still be in their lower potential earning and saving years at the end of their careers. The vast majority of military personnnel is between 18 and 42 years, with a population concentration at the lower end. This means the military has a significantly younger average age than civilian companies. Since saving is highly concentrated in the 45 to 65 year old age-group, the military should have a relatively low savings rate.

B. FINANCIAL MANAGEMENT PRACTICES

Successful financial management practices include setting up a contingency savings account, prompt payment of debt and a flexible budget. Recently, military leaders have tried to emphasize these points, reflecting their concern about imprudent practices. Captain Tim Myers, USN, Commanding Officer of a large amphibious ship, expressed his concern to his sailors and marines as follows:

* Recently there has been a steady increase of Service Members receiving letters of indebtedness due to the nonpayment of bills, returned checks, and most seriously, filings for bankruptcy. The causes, in most part, are due to Service Members' use of credit, charge cards, mismanagement of checking accounts and

finally, poor financial management. This poor financial management is found in all pay grades, both Officer and Enlisted.

* We, as Service Members and ever more important, members of society, have the responsibility to ourselves and our dependents to liquidate our debts in a timely manner. In order to do this, proper management of personal finances is mandatory.

* Sound management of personal finances permits prompt bill payment, establishment of a savings fund, as well as allowing for personal expenses. Additionally, it will also put the Service Member in good financial standing to receive future loans and extensions of credit. The consequences of improper management will result in loan refusal, credit liability, letters of indebtedness, and quite possibly, NJP [nonjudicial punishment] actions. [Ref. 35]

The growing concern for the fiscal well-being of service members is also recognized by the Chief of Naval Operations (CNO), Admiral Kelso. On July 24, 1990, he announced a forthcoming Navy Personal Financial Management, Education, Training and Counseling Program (PFM).

> During the past decade an increasing number of Navy members experienced severe financial problems. While several excellent programs exist to assist Service Members with their problems, they tend to be independent, non-standardized efforts in basic consumer awareness and sound money techniques.
>
> Growing concern for the fiscal well being of Navy members has generated a comprehensive Navy-wide Personal Financial Management program to be implemented in fourth quarter CY 1990. ...PFM is intended to increase individual awareness, instill responsible attitudes toward, and provide knowledge of actions and skills involved in sound money management. PFM is designed to assist Navy members and their families meet the ever increasing challenge to quote make ends meet unquote in today's society.[Ref. 36]

The existence of this program is not to say that severe financial problems among military personnel are confined to the Navy, but that the Navy is making a comprehensive effort to address the problem. The evidence suggests that there is a need for military members to practice better personal financial management. The need for a savings program is underscored by leaders' attempts to instill better personal financial practices in today's service members.

C. COMPLEXITY OF MILITARY INCOME

The complex compensation system in the military "consists of more than 40 different pays and allowances and many supplemental benefits."[Ref. 24:p. 9] All military members receive base pay, which is taxable. While the complexity of the system itself does not suggest a low propensity for saving, it does mean that any incentive program addressing the need to increase savings should be consistent with this system and easily understandable to personnel. It is the previously mentioned pay gap of approximately 10 percent between the military and civilian sectors which restricts the size of military pay and thereby predicts a lower saving rate.

D. FREQUENT DIRECTED MOVES

The fact that members of the military have frequently directed moves may impose the greatest disruption to savings, and underscores the need for a savings program. This results from the widely recognized fact that home ownership is the best traditional form of savings.

Although VA loans allow veterans to purchase without the customary downpayments, homeownership and the savings that it would allow are not necessarily attractive for military personnel. A special insert by the Wall Street Journal on real estate describes the short term housing owners' dilemma.

> ...selling and buying a home mean(s) steep transactions costs--broker fees, loan points, and so on--that amount to nearly 10% of the value. So the newly bought home has to appreciate by more than 10% just to break even. "Given the huge transaction costs, buying doesn't make sense unless the holding period is going to be relatively long."[Ref. 37]

Required moving every two to three years does not always allow time for a single residence to appreciate enough to overcome high transaction costs. As a result, military members are forced to sell before appreciation can offset the transaction costs incurred in buying and selling; or, they become reluctant landlords. Becoming a reluctant landlord presumably results in savings programs receiving less attention.

Frequent moves discourage savings in another way. Most military families enjoy moving to different locations and meeting people. However, moving can disrupt a working spouse's opportunity for upward mobility in a given career by losing the longevity, seniority and credentials from one state to another. This translates into lost income which can provide the basis for saving.

E. CURRENT ALTERNATIVES

Despite the relative inexperience, youth, mobility and low pay of service members, which indicate a lower savings rate, members of the military have some savings options. Service members have excellent job security and some of their income from allowances (e.g., housing and subsistance) provide an imputed tax advantage. Almost all of the military members are income eligible to contribute to an Individual Retirement Account (IRA) in that their Adjusted Gross Income (AGI) is below the limits set for the full deductible contribution. However, national figures on IRA contributions remain low. "A May 1988 census survey found that 12 percent of workers age 16 and older were contributing to IRAs. Of those not covered by employer plans, only 10 percent contributed to IRAs."[Ref. 29:p. 3] This compares with the employer-sponsored THRIFT savings plan, which has 54.4 percent of its FERS participants contributing, only three years since its introduction.(See Appendix B.)

Why has participation in the IRA approach been so low? Perhaps many do not understand that if they are to have any capital at all when they are 59½ (the age eligible to withdraw funds), they should be contributing to an account in the least costly manner. Military members, focusing on the 20 to 30 year retirement goal, may consider their intermediate goals more important. Two major responsibilities may present quite formidable intermediate saving goals, namely, buying a home and paying for college education. (See Table 5.1) Civilian counterparts can utilize sweetened employer-sponsored equity borrowing options from their retirement plans or home equity loans.

Service members do not have an employer-sponsored savings plan. Many service members do not own homes and live in government provided quarters.

F. RETIREMENT AND TRANSITION TO CIVILIAN LIFE

Service members will undoubtedly experience a more difficult psychological transition to a civilian job when faced with the capital-intensive responsibilities of college tuition and home ownership. Without proper planning and a disciplined approach to savings, career service members may be facing escalating tuition costs at the same time as they are dropping down to a retirement stipend. Military "retirement" should be thought of as a transition to civilian life.

> 20-year retirees will receive half of their base pay, or approximately 37 percent of their total pay. Allowances for quarters, subsistence or other pay are not included in base pay.[Ref. 38]

> Financial planners traditionally suggest you will need 60 to 80 percent of pre-retirement income after you retire to live comfortably and to meet expenses. [Ref. 38:p. 7]

Therefore, even families with retirement pay must seek additional income, since they need 60-80 percent not 37 percent of pre-retirement income. The prospects are particularly alarming for those who have been consuming all disposable income, raising children and living in government housing

TABLE 5.1 COLLEGE SAVINGS CALCULATOR

How much parents need to put aside each month to meet the projected cost of college when their child is ready*...:

Years until child begins college	Projected four-year cost: Public	Projected four-year cost: Private	Monthly investment: Public	Monthly investment: Private
1	$27,923	$59,200	$2,228	$4,724
2	29,877	63,344	1,144	2,426
3	31,969	67,778	783	1,661
4	34,207	72,522	603	1,278
5	36,601	77,599	495	1,049
6	39,163	83,031	423	896
7	41,904	88,843	371	787
8	44,838	95,062	333	705
9	47,976	101,716	303	642
10	51,335	108,837	279	591
11	54,928	116,455	259	549
12	58,773	124,607	243	515
13	62,887	133,329	229	485
14	67,289	142,663	217	460
15	72,000	152,649	207	438
16	77,040	163,334	198	419
17	82,432	174,768	190	402
18	88,203	187,002	183	387

*Four-year costs include tuition, fees, room and board, books and transportation. Table assumes 7% annual increases of college costs and 8% annual pre-tax return on investments, and College Board Annual Survey of Colleges, 1989. Table assumes no additional investments, and no additional earnings on balance invested, once child starts school.
Source: T. Rowe Price Associates [Ref. 39]

during their military careers. This group must be especially prudent about saving. They will have even greater expenses on significantly lower income.

G. SUMMARY

In summary, the evidence suggests the active duty military member has the same reasons to save for future expenses as civilians but does not have the same means. Their expenses are likely to be great. In addition, because of their relatively young age, low income and the frequency of directed moves, they are not likely to be following the necessary principles espoused by good financial management. In fact, the military member's advantages of an early retirement, easy home loans through the VA and job security may actually reduce their incentive to establish a contingency saving program.

The evidence is clear that there is a need for active duty personnel to have an employer-sponsored saving program similar to ones offered in the civilian sector.

VI. THE PROPOSAL:

AN ACCOUNT FOR SAVING ACTIVE PAY

This chapter will introduce a tax-sheltered savings program for active duty military personnel. This proposal is called an Account for Saving Active Pay (ASAP). It is intended to give military personnel an employer-sponsored retirement saving program similar to plans currently available to civilians. ASAP is designed after the 403(b) or tax-sheltered annuity (TSA). The TSA retirement plan, specified by section 403(b) of the IRS code, is allowed for nonprofit organizations and public school employees. The ASAP proposal envisions extending the eligibility to active duty military personnel. It builds on the existing TSA or 403(b) by using the same limits and by tailoring the program to the military compensation system. The purpose of the ASAP proposal is to help generate an increase in personal savings in the military (without merely shifting savings from one sector to another) thus affecting the low national savings rate in a positive way.

A. EXTENDING ELIGIBILITY OF TSA OR TSP

The review of employer-sponsored retirement savings programs in Chapter IV revealed two plans for possible consideration, the Thrift Savings Plan for government employees and the TSA or 403(b) for nonprofit organizations.

A case could be made in each instance that military service members are government employees and are also working for a nonprofit organization. In each case, extending the benefit of these plans to include military personnel was determined to be reasonable considering the following rationale.

The IRS currently allows two types of organizations to offer TSAs or 403(b) plans:

* public school systems
* 501(c)(3) organizations--which are nonprofit organizations like nonprofit hospitals and nonprofit charitable, educational, scientific or religious groups.[Ref. 34]

The military most closely parallels nonprofit educational or charitable organizations. IRS publication 557, entitled "Tax-Exempt Status for Your Organization," describes an educational organization as follows:

> The term educational relates to the instruction or training of individuals for the purpose of improving or developing their capabilities,...[being] beneficial to the community.[Ref. 40]

The Army, Navy, Marine Corps, Air Force and the Coast Guard all perform as educational organizations and perform a function beneficial to the community--common defense. The IRS further describes charitable organizations in a similar way:

> If your organization is applying for recognition of exemption as a charitable organization, it must show that it is organized and operated for purposes that are beneficial for the public interest. Some examples of this type of organization are those which are organized for:
>
> * ...advancement of education or science;

* Erection or maintenance of public buildings; monuments or works;

* Lessening the burdens of government;

* ...elimination of prejudice and discrimination;

* Defense of human and civil rights secured by law; and,

* Combating community deterioration and juvenile delinquency.[Ref. 40:p. 13]

Logically, the uniformed services are organized and operated for purposes which are beneficial to the public interest in that they are chartered by Congress to support and defend the U.S. Constitution. Examples of how the military meets these criteria include: fighting the "war against drugs," maintaining ships, aircraft and equipment, defending human and civil rights as well as national interests in operations such as *"Desert Shield" in Saudi Arabia*, Operation "Just Cause" in Panama or the Freedom of Navigation operations near Libya.

The rationale for extending the government's employer-sponsored (TSP) plan to the military is straightforward. The military and the government employees share the same employer.

B. RATIONALE FOR THE TSA

The ASAP proposal was designed after the 403(b) for two reasons. First, the 403(b) plan does not require the employer to contribute any income. Therefore, the cost to the government is limited to only the delay in payment of taxes. It successfully makes the voluntary decision to save or to consume a neutral one.

The second reason is that the 403(b) plan's limits on contributions are more appropriate to the military pay scale. The military retirement system is based on basic pay. This is the only cash pay received by all the military members each month. It is based on pay grade and time in service. Members of the services are eligible to retire with a minimum of 20 years of cumulative service. Taking this into consideration, it is reasonable to base the savings account contributions on the basic pay as well.

Table 6.1 displays the 1990 Basic Pay Scale for Officers. The table is in terms of monthly basic pay for officer pay grades. The 20 percent or $9500 annual limit of the 403(b) means a maximum contribution would be reached by a participant making an annual salary of $47,500. It is mathematically determined as follows:

$$\text{TSA limit} \quad \frac{100\%}{20\%} = \frac{x}{\$9500}\text{; therefore, } 5 \times \$9500 = \$47{,}500.$$

$$\frac{\$47{,}500 \text{ (annual salary)}}{12 \quad \text{(months)}} = \$3958.33 \text{ per month.}$$

Referring to Table 6.1, an O-5 (a Navy Commander or an Army Lieutenant Colonel for example) with over 20 cumulative years of service is payed $3983.40 in Basic Pay per month, or $47,800.80 basic pay per year. This makes for an almost perfect match with the salary cap of the TSA plan.

Cumulative Years of Service

Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 26
5916.30	6124.50	6124.50	6124.50	6124.50	6359.40	6359.40	6516.60	While serving as CNO or Chairman, Joint Chief of Staff an O-10's basic pay is $6516.60...					
5243.40	5380.80	5495.40	5495.40	5495.40	5635.20	5635.20	5869.80	5869.80	6359.40	6359.40	6516.60	6516.60	6516.60
4749.30	4891.50	5007.60	5007.60	5007.60	5380.80	5380.80	5635.20	5635.20	5869.80	6124.50	6359.40	6516.00	6516.60
3946.20	4214.40	4214.40	4214.40	4403.40	4403.40	4658.70	4658.70	4891.50	5380.80	5751.00	5751.00	5751.00	5751.00
2925.00	3213.60	3424.20	3424.20	3424.20	3424.20	3424.20	3424.20	3540.30	4100.10	4309.50	4403.40	4658.70	5052.60
2339.10	2746.80	2936.70	2936.70	2936.70	2936.70	3025.50	3188.10	3402.00	3656.70	3866.40	3983.40	4122.60	4122.60
1971.90	2401.20	2561.40	2561.40	2608.80	2724.00	2909.70	3073.20	3213.60	3354.60	3447.30	3447.30	3447.30	3447.30
1832.40	2048.70	2190.30	2432.40	2539.20	2630.40	2772.60	2909.70	2981.40	2981.40	2981.40	2981.40	2981.40	2981.40
1597.80	1745.10	2096.40	2166.90	2212.20	2212.20	2212.20	2212.20	2212.20	2212.20	2212.20	2212.20	2212.20	2212.20
1387.20	1444.20	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10	1745.10

Source: Military Personnel Command. DoD Compensation Office.

TABLE 6.1 THE 1990 BASIC PAY SCALE FOR OFFICERS
(in dollars per month)

The higher 20 percent of salary limit with 403(b), as opposed to the 10 percent limit of the TSP, makes this possible.

Figuring the comparable maximum contribution possible with the TSP limits illustrates that the limits are not practical for the pay scale.

$$\text{TSP limit} \quad \frac{100\%}{10\%} = \frac{x}{\$7979}; \quad \text{therefore, } \$7979 \times 10 = \$79{,}790.$$

$$\frac{\$79790 \text{ (annual salary)}}{12 \quad \text{(months)}} = \$6649.17 \text{ per month.}$$

This demonstrates that in order to maximize the contribution, an annual salary of $79,790 or a monthly salary of $6649.17 is required. Referring to Table 6.1, the basic pay of the highest ranking military member (the O-10s) is capped at $6516.60 per month. Thus, even the highest paid military member is not able to contribute the maximum amount with the TSP limits. This shows that the 403(b)'s limits of 20 percent of salary or $9500 are more realistic for the military pay scale.

C. TSA MODIFICATION

The most significant modification of the TSA program incorporated by ASAP is prorating the 20 percent deduction of salary. The ASAP proposal would permit contributions of one percent of base pay per year of cumulative military service (up to the 20 percent TSA maximum). The purpose of an increasing benefit with time in service is to provide an incentive for longevity in the service. It is also consistent with the implied principles of the military compensation system.

The GAO has developed a list of principles which military compensation should provide. The following principles apply:

* have a predictable adjustment mechanism;
* distinguish between levels of responsibility;
* support and preserve the hierarchical military structure;
* be fully visible to service members and the public;
* minimize pay differentials among people of equal rank and service time.[Ref. 24:p. 25]

Prorating the contributable limit for each year of service would do all of the above.

Simply knowing that the entitlement increases one percent for each year of service, creates a psychological effect. The service member can translate the increase into an increase in pay privileges. Since the program is voluntary, the member may not even participate yet still feel rewarded with the opportunity to contribute at a higher level. The one percent increase per year conforms to the principle of a predictable adjustment mechanism.

Distinguishing between levels of responsibility is important in the services. Frequently a junior officer has responsibility for enlisted personnel who have more time in service. The pay scale recognizes this and rewards both increases in grade and time in service. By gradually increasing the eligibility, the hierarchical structure is emphasized.

Another reason for the increasing benefit involves successful financial management; that is, the principle when establishing a budget to "pay oneself first." Instead of being intimidated by the 20 percent limit for a deduction, personnel could grow into the budget change. Each year a small adjustment of one percent could be added to their previous deduction. It is much easier to rationalize a change in spending behavior at one percent than to dramatically alter one's lifestyle. A successful savings plan must provide an incentive for people to realistically address and alter their spending behavior.

For some people, imposing self-discipline achieves long-term results. In an article on mandatory retirement saving, the authors describe an interesting phenomenon:

> Mandatory retirement saving is in a sense a collective manifestation of the 'Christmas Club' syndrome. The phenomenon is that individuals deliberately discipline themselves to save for a future goal, whether Christmas shopping or retirement, by making it costly or impossible to stop doing so. Other examples are the use of mortgage or installment credit to make purchases which some consumers could finance in whole or part by drawing on liquid assets. The rationale is that they fear they will not in fact restore their assets, while the debt repayment contract forces them to do the equivalent saving. In these cases the household seeks to protect its true long-run utility maximization against less valid short-run temptations, self-disciplinary behaviour that is not less real for being ruled out of standard economic models.[Ref. 41]

The lesson for the ASAP program's prorated limits is to demonstrate to the contributor that sticking to a realistic one percent increase can produce the desired goal. In this way, the contributor can "force" himself to stick to the plan. After all, it's the follow-through with a program that is important.

D. MAXIMUM POTENTIAL CONTRIBUTIONS

Examples of maximum potential contributions which could serve as "carrots" for participation have been calculated using the 1990 pay scale. An officer is assumed to contribute the maximum amount allowable until reaching 20 percent of base pay at 20 years of service. Table 6.2 indicates the time in each grade for a typical officer's career.

TABLE 6.2 TIME IN GRADE FOR AN OFFICER

Grade/ Rank	Time in Service
0-1	commissioning up to 2 years
0-2	2 to 4 years
0-3	4 to 10 years
0-4	10 to 16 years
0-5	16 to 20 years

Source: Defense Manpower Data Center, Monterey, California.

Note: Time in Service includes all services, rounded to the nearest year.

Based on the time in service and the monthly base pay, the maximum amount an officer could contribute for each year of service is illustrated in Table 6.3. Using the tables for the future value of a dollar (see Appendix C), with an

TABLE 6.3 MAXIMUM ASAP CONTRIBUTIONS

FOR OFFICERS IN 1990 DOLLARS

Years of Service	Rank	Monthly Base Pay	Annual Base Pay	%	Contributions Annual	Contributions Monthly
1	O-1	$1,387.20	$16,646.40	1	$166.46	$13.87
2	O-1	1,387.20	16,646.40	2	332.93	27.74
3	O-2	1,745.10	20,941.20	3	628.24	52.35
4	O-2	2,096.40	25,156.80	4	1,006.27	83.86
5	O-3	2,423.40	29,092.80	5	1,454.64	121.22
6	O-3	2,423.40	29,092.80	6	1,745.57	145.46
7	O-3	2,539.20	30,470.40	7	2,132.93	177.74
8	O-3	2,539.20	30,470.40	8	2,437.63	203.14
9	O-3	2,630.40	31,564.80	9	2,840.83	236.74
10	O-3	2,630.40	31,564.80	10	3,156.48	263.04
11	O-4	2,909.70	34,916.40	11	3,840.80	320.07
12	O-4	2,909.70	34,916.40	12	4,189.97	349.16
13	O-4	3,073.20	36,878.40	13	4,794.19	399.52
14	O-4	3,073.20	36,878.40	14	5,162.98	430.25
15	O-4	3,213.60	38,563.20	15	5,784.48	482.04
16	O-4	3,213.60	38,563.20	16	6,170.11	514.18
17	O-5	3,656.70	43,880.40	17	7,459.67	621.64
18	O-5	3,656.70	43,880.40	18	7,898.47	658.21
19	O-5	3,866.40	46,396.80	19	8,815.39	734.62
20	O-5	3,866.40	46,396.80	20	9,279.36	773.28
21	O-5	3,983.40	47,800.80	20	9,500.00*	791.67

* The maximum annual contribution to an ASAP account is 20 percent or $9,500.00.

assumed 8 percent interest rate on the investment, an officer's potential maximum account balance after 20 years of service of $139,565.79 (shown in Table 6.4).

Taxes would be due upon withdrawal of this account, or the account could be partially or fully rolled-over into an IRA. If the lump sum option were taken, assuming a tax bracket of 28 percent, the account would net $100,487.37. This would provide a sizable addition to an officer's retirement benefit, yet would not be unreasonably large or unattainable. Since the officer is presumed to be transitioning into a civilian job and not immediately retiring, this would be a reasonable quantity, in today's purchasing power to meet the responsibilities of buying a home or paying tuitions (see Table 5.1).

The matured account would supplement an O-5's monthly retirement pay (see Table 6.1). The retirement stipend is calculated at 50% of the officer's monthly basic pay (e.g., $3866.40 x .5 = $1933.20 per month before taxes). For those who entered service after the 1986 Reform, the factor for monthly pay drops to 40%. When a service member reaches the maximum 20 percent contribution, or the $9500 limit, additional years in the service beyond twenty remain an incentive to contribute up to the maximum level. This rewards longevity while preserving the principles of military compensation.

TABLE 6.4 MAXIMUM ASAP BALANCE

FOR OFFICERS IN 1990 DOLLARS

Years of Service	Annual Contributions		Future Value of $1 factor at 8%, n periods		Total Value After 20 yrs
1	$ 199.46	x	4.6610	=	$ 929.68
2	332.93		4.3157		1,436.83
3	628.24		3.9960		2,510.45
4	1,006.27		3.7000		3,723.20
5	1,454.64		3.4259		4,983.45
6	1,745.57		3.1722		5,537.30
7	2,132.93		2.9372		6,264.84
8	2,437.63		2.7196		6,629.38
9	2,840.83		2.5182		7,153.78
10	3,156.48		2.3316		7,359.65
11	3,840.80		2.1589		8,291.90
12	4,189.97		1.9990		8,375.75
13	4,794.19		1.8509		8,873.57
14	5,162.98		1.7138		8,848.32
15	5,784.48		1.5869		9,179.39
16	6,170.11		1.4693		9,065.74
17	7,459.67		1.3605		10,148.88
18	7,898.47		1.2597		9,949.70
19	8,815.39		1.1664		10,282.27
20	9,279.36		1.0800		10,021.71

Totals: $79,297.40 of contributions yields: $139,565.79

The same methodology was employed to calculate the enlisted member's hypothetical maximum account balance. Table 6.5 indicates the time in service for each grade for a typical enlisted member's career.

Table 6.5 TIME IN GRADE FOR AN ENLISTED MEMBER

Grade/ rank	Years of Service
E-1	enlistment to 6 months
E-2	6 months to 1 year
E-3	1-2 years
E-4	2-5 years
E-5	5-9 years
E-6	9-13 years
E-7	13-17 years
E-8	17-20 years

Source: Defense Manpower Data Center, Monterey, California.

Based on the time in service and the monthly base pay, shown in Table 6.6, the maximum amount an enlisted member could contribute for each year of service is illustrated in Table 6.7. Using the tables for the future value of a dollar (see Appendix C), with an assumed 8 percent interest rate on the investment, an enlisted member's potential maximum account balance after 20 years of service of $71,584.60 (shown in Table 6.8).

Cumulative Years of Service

Under 2	Over 2	Over 3	Over 4	Over 6	Over 8	Over 10	Over 12	Over 14	Over 16	Over 18	Over 20	Over 22	Over 26
2171.70	2171.70	2171.70	2171.70	2171.70	2171.70	2171.70	2220.60	2271.00	2322.90	2374.80	2421.00	2548.20	2796.00
1821.30	1821.30	1821.30	1821.30	1821.30	1821.30	1873.20	1922.70	1972.50	2024.70	2071.20	2122.20	2246.70	2496.90
1271.40	1372.50	1423.50	1473.30	1523.40	1572.00	1622.40	1672.80	1748.70	1798.20	1848.30	1872.30	1998.00	2246.70
1094.10	1192.20	1242.00	1294.80	1343.10	1391.70	1443.00	1517.40	1564.80	1615.50	1640.10	1640.10	1640.10	1640.10
960.00	1044.90	1095.60	1143.30	1218.30	1268.10	1318.50	1366.80	1391.70	1391.70	1391.70	1391.70	1391.70	1391.70
895.50	945.60	1001.10	1078.80	1121.40	1121.40	1121.40	1121.40	1121.40	1121.40	1121.40	1121.40	1121.40	1121.40
843.60	889.80	925.50	962.10	962.10	962.10	962.10	962.10	962.10	962.10	962.10	962.10	962.10	962.10
811.80													
724.20	(with over 4 months of active duty service)												
669.60	(with less than 4 months of active duty service)												

Source: Military Personnel Command. DoD Compensation Office.

TABLE 6.6 THE 1990 BASIC PAY SCALE FOR ENLISTED PERSONNEL
(in dollars per month)

TABLE 6.7 MAXIMUM ASAP CONTRIBUTIONS

FOR ENLISTED PERSONNEL IN 1990 DOLLARS

Years of Service	Rank	Monthly Base Pay	Annual Base Pay	%	Contributions Annual	Contributions Monthly
1	E-1/E-2	$798.50	$9,582.00*	1	$ 95.82	7.99
2	E-3	843.60	10,123.20	2	202.46	16.87
3	E-4	945.60	11,347.20	3	340.42	28.37
4	E-4	1,001.10	12,013.20	4	480.53	40.04
5	E-4	1,078.80	12,945.60	5	647.28	53.94
6	E-5	1,143.30	13,719.60	6	823.18	68.60
7	E-5	1,218.00	14,619.60	7	1,023.37	85.28
8	E-5	1,218.00	14,619.60	8	1,169.57	97.46
9	E-5	1,268.10	15,217.20	9	1,369.55	114.13
10	E-6	1,391.70	16,700.40	10	1,670.04	139.17
11	E-6	1,443.00	17,316.00	11	1,904.76	158.73
12	E-6	1,443.00	17,316.00	12	2,077.92	173. 6
13	E-6	1,517.40	18,208.80	13	2,367.14	197.26
14	E-7	1,672.80	20,073.60	14	2,810.30	234.19
15	E-7	1,748.70	20,984.40	15	3,147.66	262.31
16	E-7	1,748.70	20,984.40	16	3,357.50	279.79
17	E-7	1,798.20	21,578.40	17	3,668.33	305.69
18	E-8	2,024.70	24,296.40	18	4,373.35	364.45
19	E-8	2,071.20	24,854.40	19	4,722.34	393.53
20	E-8	2,071.20	24,854.40	20	4,970.88	414.24
21	E-9	2,421.00	29,052.00	20	5,810.40	484.20

* To calculate the first year of base pay, a weighted average was used.
4 mos. @ E-1 x $724.20 = $2,896.80
2 mos. @ E-1 x 811.80 = 1,623.60
6 mos. @ E-2 x 843.60 = 5,061.60
total base pay for the first year = $9,582.00

TABLE 6.8 MAXIMUM ASAP BALANCE

FOR ENLISTED PERSONNEL IN 1990 DOLLARS

Years of Service	Annual Contributions	Future Value of $1 factor at 8%, n periods	Total Value After 20 yrs
1	$ 95.72 x	4.6610 =	$ 446.15
2	202.46	4.3157	873.76
3	340.42	3.9960	1,360.32
4	480.53	3.7000	1,777.96
5	647.28	3.4259	2,217.52
6	823.18	3.1722	2,611.29
7	1,023.37	2.9372	3,005.84
8	1,169.57	2.7196	3,180.76
9	1,369.55	2.5182	3,448.80
10	1,670.04	2.3316	3,893.87
11	1,904.76	2.1589	4,112.19
12	2,077.92	1.9990	4,153.76
13	2,367.14	1.8509	4,381.34
14	2,810.30	1.7138	4,816.29
15	3,147.66	1.5869	4,995.02
16	3,357.50	1.4693	4,933.17
17	3,668.33	1.3605	4,990.76
18	4,373.35	1.2597	5,509.11
19	4,722.34	1.1664	5,508.14
20	4,970.88	1.0800	5,368.55

Totals: $41,222.40 of contributions yields: $71,584.60.

If the lump sum option were taken, assuming a tax bracket of 28 percent, the account would net $51,540.91. If portions of the account were withdrawn, the more likely tax bracket would be 15 percent which would net $60,846.91.

E. THE ANACRONYM ASAP

The anacronym ASAP was deliberately chosen because of its familiarity in the military. It is one of the first learned and most widely used anacronyms in the service, meaning "As Soon As Possible." It is envisioned that, like the government's "Thrift" Savings Plan, which conjures up the positive virtue of "thrift" espoused by Benjamin Franklin, military personnel will feel more comfortable with such a term, overcoming the natural resistance to change. Imaginative publicity utilizing the anacronym's double meaning might thus increase participation. It should be emphasized that the service member should begin this voluntary program "as soon as possible" to boost his or her retirement potential.

F. ELIGIBILITY

Eligibility requirements of the ASAP proposal were determined to be active duty personnel for several reasons. Reservists have other civilian jobs and are presumably already eligible for employer-sponsored retirement programs. They are not directed to move as frequently nor are they subject to a pay gap inequity in their civilian employment. The United States is the only country which offers retirement benefits to part-time military reservists [Ref. 42]. ASAP would specifically not include reserve personnel in order to preserve ASAP as a relative benefit of remaining in the active forces. Employer-sponsored savings plans terminate when there is a change of status with the employer. Any eligible active duty member can therefore participate in the ASAP program as long as he or she receives an active duty paycheck. Reservists work in an active duty status two days a month and an additional two weeks a year. Since this is a long-term savings program, participation by reserve personnel is considered inappropriate.

G. PROFESSIONAL MANAGEMENT OF THE ACCOUNT

An important consideration of the employer-sponsored savings programs is professional management of the assets. The government recognized this when incorporating the TSP plan. For example:

> All of the money in the TSP is invested and managed by the Federal Retirement Thrift Investment Board, a newly created, independent government agency.[Ref. 33:p.15]

The Federal Retirement Thrift Investment Board is responsible for operating the plan in the interests of the participants and for maintaining the financial statements. This board is composed of "five members appointed by the President to oversee the TSP. Of the five members, one is recommended by the Senate and one by the House of Representatives."[Ref. 33:p. 68] This agency's professional management could be extended to include operation of the ASAP program. The Board bids the TSP account out to capable investment management service companies. The current TSP stock and bond funds have been contracted for with Wells Fargo Bank.

Many financial management companies offer TSA accounts and could also be considered contenders for the ASAP account. They include, but are not limited to: Citicorp, Fidelity Investments, Prudential and the USAA Annuity and Life Insurance Company. These financial institutions feature TSAs with options from secure to aggressive investments, interfund transfers and low interest loan arrangements.

H. IMPLEMENTATION

IRS publication number 571 explains how Social Security benefits are not disrupted by TSA contributions. "The contributions toward the tax sheltered annuity under a salary reduction agreement are considered wages for the FICA (Social Security) tax."[Ref. 31:p. 9] Therefore, Social Security tax and benefits are not affected by nor need to be adjusted by salary reduction. This simplifies the accounting and keeps all personnel eligible for identical Social Security benefits whether they contribute or not.

Every month, service members receive a Leave and Earnings Statement (LES) which shows entitlements, deductions and allotments as well as occasionally passing along administrative information. The LES is an important statement for service members because it reinforces progress in the service member's accruing entitlements. Proposed changes for incorporating ASAP with the LES would include:

* indicating the amount of elected percent contributions in the "Remarks" section of the LES.

* recording the reduction in Federal Tax as a credit in the Earnings section. This would increase the service member's Total Earnings.

* indicating the ASAP contribution as an allotment in the Deductions section on the right hand side of the LES.

The maximum allowable percent would be determined by the years (YRS) box on the top line of the LES following the Name, Social Security Number (SSN) and Pay Grade. The YRS box is determined by each individual's Pay Entry Base Date. Figure 6.1 is an example of an E-5's monthly LES.

The eligibility to increase the percent of contributions would be evenly dispersed throughout the year, because each individual's Pay Entry Base Date is also evenly distributed.

US NAVY
LEAVE AND EARNINGS STATEMENT

01-30JUN86 | 4333

WARREN, WILLIAM L	361-34-5692	E5	7	0500	225	210	0515	00

EARNINGS		DEDUCTIONS	
BASIC PAY	1075.20	SGLI	4.00
BAQ WITH DEPENDENTS	309.30	FEDERAL TAX	113.73
SEPARATE RATIONS		FICA TAX	76.87
DAILY RATE 5.21	156.30	STATE TAX	40.36
LEAVE RATIONS		SEPARATE RATIONS	
RETRO ENTRY		RETRO ENTRY	
DAILY RATE 5.21	98.99	DAILY RATE 5.21	98.99
VHA WITH DEPENDENTS	199.16	INSURANCE ALLOTMENT	10.50
		CHARITY ALLOTMENT	2.00
		SAVINGS ALLOTMENT	200.00
TOTAL EARNINGS	1838.95	TOTAL DEDUCTIONS	546.45

NET PAY (1838.95-546.45) 1292.50

PAYMENTS POSTED SINCE LAST LES:
30MAY86 646.00 DSSN 7150 NPR 3791
13JUN86 651.00 DSSN 7150 NPR 4017

BASED ON CURRENT INFORMATION AT THE NAVY FINANCE CENTER YOUR PAY IS EXPECTED TO BE:
30JUN86 647.67
15JUL86 645.00
31JUL86 650.00

REMARKS:
VHA ZIP CODE: 20371, RENT AMOUNT 1057, BAQ CODE C, NUMBER OF SHARERS: 1
ORDINARY LEAVE 18 DAYS TAKEN FROM 28APR86 TO 16MAY86
CHARITY ALLOTMENT WILL STOP AS OF JUL86
DAILY NORM EFFECTIVE 01AUG86 IS 43.08

652.17	1838.95	546.45	1297.00	647.67	LOC	43332	23JUN86
M00	1075.20	6171.80	634.78	1075.20	6171.80	441.20	6171.80	227.43	VA
12SEP79	21AUG89	12SEP79				02 05 100	

FIGURE 6.1 A Sample Leave and Earnings Statement

Source: Department of the Navy, Office of the Comptroller.

I. SUMMARY OF ASAP

The purpose of ASAP is to extend the eligibility of an employer-sponsored savings plan to active duty military personnel. Features of the ASAP proposal include:

* Tax savings with direct deposit (federal taxes are not deducted from the paycheck until after the contributions.);

* Tax-deferred investment earnings;

* Graduated eligibility rising at a rate of one percent for each year of cumulative service;

* Professional management:

  - choice of investments from secure to aggressive

  - interfund transfer; and,

  - favorable interest loan program

* Portability when leaving the service;

* Contribution limits capping at $9500 or 20 percent of salary (basic pay in the military);

* No effect on Social Security for tax purposes; and,

* High visibility on Leave and Earnings Statements.

VII. COSTS AND BENEFITS OF THE ASAP PROGRAM

Determining the costs and benefits of any proposal is difficult, particularly when the rate of participation must be estimated. The cost of the ASAP program to the government is primarily the amount of the tax revenue that is deferred. That amount depends on estimates of the number of participants, the amount they elect to defer and their relative tax bracket.

A. COSTS

The management fees associated with implementation are absorbed by the participants as part of their investment contributions. This results in no cost to the government. The manpower costs of implementation are "sunk costs" in that they have already been established in the accounting system. The reasoning here is that the resources are available to make adjustments to the military members' pay and allowances and the marginal costs of introducing ASAP are negligible.

The following estimates are used to determine the tax revenue that would be deferred as a result of implementing the ASAP program. Total basic pay for active duty military for calendar year 1989, according to the Defense Manpower Data Center, was approximately $35.4 billion. The participation rate is estimated to be approximately 50 percent based on the current participation rate of the government's employer-sponsored saving plan (THRIFT savings plan). This is an optimistic assumption so as not to underestimate the expense of implementation.

The next estimate is to determine the average percent distribution of contributions. Since the ASAP proposal allows a graduated increase corresponding to years of service, the total must be between one and 20 percent. The average time in service is 6.6 years for officers and 4.8 years for enlisted personnel (see Appendix D).

Since there is about a six to one ratio of enlisted personnel to officers (1,767,194:288,735) this yields a weighted average maximum level of contribution of 5.1 years. (See Appendix E.) This translates to a six percent participation, since the participant would be into the sixth year of service.

The next estimated figure is determining the marginal tax bracket of the contributors. Based on calendar year 1989 taxable wages, the majority of military personnel were in the 15 percent tax bracket (see Table 7.1).

In Table 7.1, the number of members in for a full year were multiplied by their corresponding tax brackets (i.e., 15, 28 and 33). The respective products were added and then divided by three to obtain the weighted average tax bracket. This yielded the weighted average marginal tax bracket of 16 percent for all members in for a full year.

TABLE 7.1 MARGINAL TAX BRACKETS OF MILITARY BASED ON CALENDAR YEAR 1989 TAXABLE WAGES

	All members		Members in for full year	
	number	%	number	%
15%	2,016,064	91.9	1,766,703	90.9
28%	175,282	8.0	175,263	9.0
33%	2,591	.1	2,591	.1

Source: Defense Manpower Data Center, Monterey, California.

The following calculations are made to determine an estimate of the deferred tax revenue involved in implementing ASAP.

Total basic pay in calendar year 1989:	$35.4 billion
multiplied by estimated participation:	x .5
Total basic pay of participants:	$17.7 billion
multiplied by average % distribution of contributions (6%):	x .06
(Estimated total contributions):	$1.062 billion
multiplied by marginal weighted average tax bracket of contributors:	x .16
(Estimated deferred tax revenue):	$169.9 million

Thus, a conservative estimate of the approximate cost of buying in to the ASAP proposal is $170 million. Adopting the ASAP proposal is cost-effective if $170 million in benefits can be generated to compensate for the deferred tax revenue. To illustrate the relative magnitude of $170 million, we can relate this amount to total basic pay ($35.4 billion) for 1990. The result shows that $170 million is less than a 0.5 percent pay increase to the military.

Another way to consider the cost in is in terms of the lost revenue and its impact on the deficit. Total FY 1990 revenues (individual income taxes, corporate taxes, social taxes and excise taxes) amounted to $1.1 trillion.[Ref. 43] This proposal would appear to diminish total revenues by:

$$\frac{\$170 \text{ million}}{\$1.1 \text{ trillion}} \quad \text{which equals .01545 percent.}$$

When analyzing the lost revenue in terms of its impact on the deficit, we see that it is even smaller than an order of magnitude less than a tenth of one percent. It results in a very minor fiscal adjustment. And note that since this revenue is deferred, it is ultimately paid to the government, though there may be a small loss in revenue if the participants are in a lower tax bracket when they withdraw the *funds*.

B. BENEFITS

This thesis emphasizes the equity issue involved in employer-sponsored saving plans. Employee groups in the private sector, from profit to nonprofit organizations as well as government employees, are eligible for these plans. If the government plans to rectify the inequality of excluding military personnel from such plans, then the least costly program would be preferred.

Unlike the TSP, the ASAP proposal does not require any employer contributions. Additionally, the maximum eligibility to contribute is phased in, which decreases the overall cost. Furthermore, the ASAP proposal includes only full time active duty military personnel, as opposed to one including reservists.

1. Generating Additional Savings

One benefit of implementing a tax-sheltered program for active duty military personnel is generating additional savings for the loanable funds market. Referring back to the calculations that estimated the deferred tax revenue, the estimated total contributions for a given level of participation can be determined. At a level of 50 percent participation, which results in a cost of approximately $170 million, the additional savings amounts to over $1 billion. A significant aspect of this input of funds is that there would be minimal transfer of funds from existing savings accounts. Because the money is directly contributed from salaries, transferring existing savings into the account is prevented. Furthermore, because the contributions are deducted before taxes, it is unlikely that personal savings in other accounts would be reduced by the total amount contributed to ASAP. This potential $1 billion injected into the loanable funds market will help the economy to expand. Businesses will circulate the money back into the personal sector through wages and revenue will flow back to the government in the form of taxes on capital gains. Thus, this additional source of long-term savings will be invested in wealth-generating corporations or government securities, providing real benefits to all participants.

2. Retaining Experienced Personnel

An important challenge for the Department of Defense in the 1990's is to improve the management of personnel during a period of declining force levels. The goal of reducing the force level should not include unnecessary losses of experienced personnel. This leads to a hollow force. The ASAP proposal offers, in effect, a pay raise to only the personnel who opt to participate. It effectively targets active duty personnel, specifically providing increased benefits to those who wish to make the service a career. The cumulative rewards are increased for those experienced personnel who are difficult and costly to replace. The capability to retain experienced personnel comes from the increased benefits which ASAP makes available to people who stay in the services for the long haul. The significance to the government is that the pay scale is not altered. This does not affect retirement outlays which are determined by using the basic pay scale.

3. Elimination of Double Taxation

ASAP represents one way to reduce the effect of double taxation of saving and reduces the bias against saving. This restores the neutrality between saving and spending. Taxes would be due upon withdrawal from the account. By deferring the tax, ASAP reduces the incentive for immediate consumption since the amount saved is not penalized by a tax that reduces its buying power.

4. Encouraging Military Savings

ASAP encourages military members to establish a methodical savings vehicle. It can be dovetailed into personal financial management programs designed to educate military personnel about the value of investing. ASAP provides a means for military personnel to save for intermediate savings. It is interesting to note that the GAO calculated that defaults on student loans increased from $50 million in 1988 to $247 million in 1989.[Ref. 44] If the financial resources had been saved in advance, the loan default rate may have been mitigated. ASAP could help provide the financial resources for the education of military dependents. The same would be true with home loans--avoiding possible default situations.

5. Deferring Taxes

It has already been mentioned that the structure of the ASAP program is designed to defer taxable contributions and their earnings in the account. This is not only a benefit for the participants but it also benefits the government. As the account grows, so too does the potential revenue the government will collect in the form of taxes which will be due upon withdrawal. ASAP is thus just as much an investment for the government as it is for the active duty military who participate.

VIII. CONCLUSIONS

Our low national savings adversely affects our economic growth. The conclusion of this research is that the decline in the savings rate and its implications are significant and that governmental action is needed to reverse this condition. It suggests the need to establish incentives, through a carefully designed tax structure, to promote savings that will provide us with the catalyst for competitiveness which we need. Our present income tax system favors consumption over saving. Moving toward a consumption or expenditure tax philosophy would restore neutrality toward spending and would almost certainly improve savings in the near term.

The low national savings rate affects all citizens, but it is particularly costly to the military. Members of Congress realize that low national savings is a problem and direct the pressure to reduce spending toward discretionary spending programs. This has resulted in a continuing trend of approving pay increases for the military that are less inflation and an erosion of retirement benefits for military personnel. The uncertainty of congressional support and the loss of commitment to maintain competitiveness with the private sector may result in a serious loss of career military personnel within the next several years.

The evidence suggests the active duty military member has the same reasons to save for future expenses as civilians, but does not have the same means. Because of their relatively young age, low income and the frequency of directed moves, members of the military are not likely to follow the necessary principles espoused by good financial management. The military member's advantages of an early retirement, easy home loans through the VA and job security may actually work against them in establishing a contingency saving program.

Legislators have recognized the need for increased savings and introduced profit-sharing and thrift savings plans to civilians, but have not included the military. One means of addressing the savings problem and this equity issue for members of the military is a well-designed, tax-protected saving plan. Such a plan would put military personnel on the same footing with similar groups of employees in the U.S.

Of all the employer-sponsored plans offered to civilians, the TSA or 403(b) is the most feasible plan to tailor to the military pay scale. It is proposed that a program, called an Account for Saving Active Pay (ASAP), be established for these purposes. This proposal would permit contributions of one percent of base pay per year of military service (up to the 20 percent which TSA's allow), with the account maturing upon termination of active duty.

The government's cost of the ASAP program is primarily the tax revenue that would be deferred. That amount depends on estimates of the number of participants, the amount they elect to defer and their relative tax bracket. The rate of participation is difficult to determine. Using an optimistic assumption, so as not to underestimate the expense of implementation, the government's employer-sponsored savings plan (THRIFT) current participation rate was utilized. This resulted in an estimated deferred tax revenue which was compared against the benefits.

It was determined that the ASAP proposal is cost-effective because it appears that the benefits from the additional savings generated, the retention of experienced personnel, the restoration of neutrality between saving and spending, the improvement of personal financial management for military personnel and the growth of potential revenue within the ASAP accounts together exceed the costs. It is feasible and cost-effective to tailor the tax-sheltered annuities (TSA's) currently available to nonprofit organizations and public school employees to the military compensation system.

This program is intended to mesh the needs of active duty military members, as part of an employee group, with the need of the government to raise the net national savings rate. ASAP is thus an investment for both the government and the active duty military who participate.

APPENDIX A

GLOSSARY OF ABBREVIATIONS AND ANACRONYMS

AGI:	Adjusted Gross Income
ASAP:	Account for Saving Active Pay
CBO:	Congressional Budget Office
CNO:	Chief of Naval Operations
COLA:	Cost of Living Allowance
CPI:	Consumer Price Index
CRS:	Congressional Research Service
CSRS:	Civil Service Retirement System
CY:	Calendar Year
DMDC:	Defense Manpower Data Center
DoD:	Department of Defense
FERS:	Federal Employees Retirement System
FoF:	Flow of Funds
FSA:	Family Savings Account
FY:	Fiscal Year
GAO:	General Accounting Office
GNP:	Gross National Product
GRH:	Gramm-Rudman-Hollings
IRA:	Individual Retirement Account
IRS:	Internal Revenue Service
LES:	Leave and Earnings Statement
NAVOP:	Naval Operational Report

NIPA: National Income and Products Accounts

NJP: Non Judicial Punishment

OECD: Organization for Economic Cooperation and Development

OMB: Office of Management and Budget

OPNAVINST: Operational Navy Instruction

PFM: Personal Finance Management

R&D: Research and Development

TSA: Tax-Sheltered Annuity

TSP: Thrift Savings Plan

USAA: Uniformed Services Automobile Association

VA: Veteran's Administration

APPENDIX B

PARTICIPATION IN THE THRIFT SAVINGS PLAN (FERS EMPLOYEES)
BY DEPARTMENT AND AGENCY (MARCH 1990)

	Total FERS Eligible for TSP	Number FERS Contributing to TSP	Percent FERS Contributing to FERS
Executive Office of the President	638	303	47.5
Executive Branch--Departments			
Agriculture	35,010	23,817	68.0
Commerce	9,533	5,165	54.2
Defense	38,641	22,919	59.3
Air Force	68,873	41,100	60.6
Army	105,407	55,528	52.7
Navy	95,692	48,261	50.4
Education	1,594	851	53.4
Energy	3,884	2,727	70.2
Health and Human Services	24,708	13,260	53.7
Housing and Urban Development	3,623	1,885	52.0
Interior	16,854	10,019	59.4
Justice	31,625	17,540	55.5
Labor	4,175	2,208	52.9
State	5,353	3,948	73.8
Transportation	17,416	12,015	69.0
Treasury	65,372	32,288	49.4
Veterans Affairs	75,459	34,104	45.2
Subtotal	602,219	327,635	54.4
Executive Branch--			
U.S. Postal Service	270,077	141,182	52.3
Other Independent Agencies	37,516	22,526	60.0
Judicial Branch	7,793	4,668	59.9
Legislative Branch	13,528	6,296	46.5
Other Entities	155	84	54.2
Total	931,926	502,964	53.9

Source: Federal Retirement Thrift Investment Board, 1989.

APPENDIX C

FUTURE VALUE OF $1 AT THE END OF n PERIODS

$FVIF_{k,n} = (1 + k)^n$

Period	6%	8%	10%	12%
1	1.0600	1.0800	1.1000	1.1200
2	1.1236	1.1664	1.2100	1.2544
3	1.1910	1.2597	1.3310	1.4049
4	1.2625	1.3605	1.4641	1.5735
5	1.3382	1.4693	1.6105	1.7623
6	1.4185	1.5869	1.7716	1.9738
7	1.5036	1.7138	1.9487	2.2107
8	1.5938	1.8509	2.1436	2.4760
9	1.6895	1.9990	2.3579	2.7731
10	1.7908	2.1589	2.5937	3.1058
11	1.8983	2.3316	2.8531	3.4785
12	2.0122	2.5182	3.1384	3.8960
13	2.1329	2.7196	3.4523	4.3635
14	2.2609	2.9372	3.7975	4.8871
15	2.3966	3.1722	4.1772	5.4736
16	2.5404	3.4259	4.5950	6.1304
17	2.6928	3.7000	5.0545	6.8660
18	2.8543	3.9960	5.5599	7.6900
19	3.0256	4.3157	6.1159	8.6128
20	3.2071	4.6610	6.7275	9.6463
21	3.3996	5.0338	7.4002	10.804
22	3.6035	5.4365	8.1403	12.100
23	3.8197	5.8715	8.9543	13.552
24	4.0489	6.3412	9.8497	15.179
25	4.2919	6.8485	10.835	17.000
26	4.5494	7.3964	11.918	19.040
27	4.8223	7.9881	13.110	21.325
28	5.1117	8.6271	14.421	23.884
29	5.4184	9.3173	15.863	26.750
30	5.7435	10.063	17.449	29.960

Source: Financial Management: Theory and Practice.[Ref. 45]

APPENDIX D

TIME IN SERVICE AT PROMOTION
ANALYSIS OF ACTIVE DUTY PERSONNEL
AS OF 30 SEPTEMBER 1989

AVERAGE TIME IN SERVICE	ALL SERVICES (OFFICERS)
W-1	.3 years
W-2	1.4
W-3	6.3
W-4	11.6
O-1	.1
O-2	1.8
O-3	3.7
O-4	10.1
O-5	15.6
O-6	19.8
O-7	26.0
O-8	28.1
O-9	30.3
O-10	31.6

TOTAL average time for officers is: 6.6 years of service.

AVERAGE TIME IN SERVICE	ALL SERVICES (ENLISTED)
E-2	.6 years
E-3	1.0
E-4	2.3
E-5	5.0
E-6	8.7
E-7	13.2
E-8	17.4
E-9	21.2

TOTAL average time for enlisted is: 4.8 years of service.

Source: Defense Manpower Data Center, Monterey, California.

APPENDIX E

ACTIVE DUTY PERSONNEL STATISTICS AS OF 30 JUNE 1990
PAY GRADE BY SERVICE

	ARMY	NAVY	M.C.	A.F.	DoD TOTAL	C.G.	TOTAL
E-1	26,686	31,963	9,995	11,068	79,712	233	79,945
E-2	55,667	51,963	20,301	25,424	152,981	3,161	156,142
E-3	88,626	71,589	55,548	58,762	273,963	4,343	278,306
E-4	180,449	106,001	34,350	118,330	439,130	7,014	446,144
E-5	120,742	106,545	25,156	109,436	361,879	5,733	367,612
E-6	85,950	82,980	15,854	57,197	241,981	5,650	247,631
E-7	51,627	34,366	9,308	39,556	134,857	2,737	137,594
E-8	14,636	10,177	3,816	9,095	37,724	547	38,271
E-9	4,326	4,784	1,519	4,636	15,265	282	15,547
E-TOTAL	628,710	499,432	175,847	433,504	1,737,493	29,701	1,767,194
W-1	2,857	0	639	0	3,496	0	3,496
W-2	6,325	1,380	518	0	8,223	627	8,850
W-3	3,982	701	324	0	5,007	399	5,406
W-4	2,134	644	254	0	3,032	453	3,485
W-TOTAL	15,298	2,725	1,735	0	19,758	1,479	21,237
0-1	11,656	10,042	2,473	9,658	33,829	558	34,387
0-2	13,632	12,345	4,114	11,556	41,468	1,016	42,484
0-3	33,992	22,535	6,254	43,383	106,164	1,842	108,006
0-4	17,412	13,641	3,228	19,359	53,640	977	54,617
0-5	10,687	7,734	1,621	12,664	32,706	652	33,358
0-6	4,640	3,849	647	5,318	14,454	335	14,789
0-7	203	130	35	167	535	12	547
0-8	146	84	26	117	373	13	386
0-9	45	30	8	37	120	4	124
0-10	13	9	2	12	36	1	37
0-TOTAL	92,247	70,399	18,408	102,271	283,325	5,410	188,735
TOTAL	736,255	572,556	195,990	535,775	2,040,576	36,590	2,077,166

Source: Defense Manpower Data Center, Monterey, California.

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